Jenkins

Report on Spontaneous Umbilical Hemorrhage of the Newly-born

REPORT

ON

SPONTANEOUS UMBILICAL HEMORRHAGE

OF THE

NEWLY-BORN.

BY

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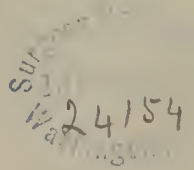

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REPORT.

To the physician, whose attention has not been attracted to this malady by some example of its more formidable variety, it may seem a needless task to search for past records of it, or to discuss at length its phenomena. In its least important form, the one most amenable to treatment, viz: bleeding from a fungoid growth supervening on the separation of the funis, it is not unfrequently seen, while the graver and almost intractable form of spontaneous umbilical hemorrhage is fortunately rare.

A careful review, then, of such facts as are recorded concerning this malady, may contribute in some instances to render prognosis more guarded, and treatment more prompt, I should hope also more successful.

I do not propose to refer in this report to instances of bleeding from the cord, the result of its careless ligation, nor to cases of traumatic hemorrhage from the umbilicus, as, *e. g.*, the oft-quoted case of Mr. Hill,[1] where the bleeding was the result of the forcible avulsion of the cord, but shall consider only those hemorrhages which, independent of accident, probably owe their existence, for the most part, to constitutional causes.

Spontaneous umbilical hemorrhage of the newly-born exists principally under two forms.

I. The form most frequently seen proceeds from a fungoid excrescence which occasionally springs up from the bottom or edge of the navel, after the falling of the cord, while cicatrization is yet incomplete. From its granulated surface, moderate bleeding occurs at intervals. While recent, it in general requires only application of the nitrate of silver crayon, to cause it to shrink and speedily

[1] Dublin Medical Press, June 7th, 1848, vol. lii. p. 556.

cicatrize. But if neglected, the granular, somewhat indurated, tubercle which exists, is best addressed by the ligature. I have not found any instance, in which this form of hemorrhage uncomplicated,[1] has proved fatal, though Underwoood[2] speaks of having known it to continue for several months, and to cause apprehension as to its effects upon the health of the child.[3]

II. But there is another form of bleeding from the umbilicus to which new-born children are liable, which may not be thus briefly dismissed. Its fatality, and the want of attention bestowed upon it by systematic writers on the diseases of children, lend encouragement to any effort to make its history more widely known, or to indicate more definitely its proper treatment.

Existing so seldom, that often the obstetric practitioner of a quarter of a century has never seen an instance of it,[4] its extreme fatality is the less likely to be recalled when the exigencies of a first case demand prompt and energetic treatment.

It occurs alike in the well-developed children of healthy parents, and in the puny heirs to cachectic constitutions. Commencing occasionally, a few hours after birth, by exudation of pale blood from the walls, and at the insertion of the funis, it more frequently succeeds, sometimes by many days, to the falling of the cord. Jaundice and purpuric eruption from their frequent association with it, may perhaps be regarded as warning signs of its coming. Other than these it has none. A serous or sanious oozing from the apparently healed surface of the umbilicus deepens gradually into a continuous percolating hemorrhage. Compression, astringents, styptics, cauterization, actual and potential, are generally alike useless in staying its flow. Even though arrested, it may be followed by effusion of blood into the cellular tissue beneath the skin, and from the mucous membranes. It ends in a majority of

[1] Dr. D. McRuer, of Bangor, Me., has communicated a case of fatal hemorrhage from the navel (No. 174 of Table), in which a fungoid growth, which supervened at the fourth week, on a previous hemorrhage, continued to bleed for two months, at intervals of from four to eight days.

[2] Diseases of Children, vol. ii. p. 89. London, 1789.

[3] See also Mr. Sterry, London Med. Gaz., vol. xliii. p. 428; Drs. Greene and Page, Boston Med. and Surg. Journ., vol. lviii. p. 22, Feb'y 4th, 1858; Simpson, J. Y., Obstetric Works, second series, p. 423. American edition.

[4] Dr. Charles Hooker, of New Haven, Conn., who has observed 2,879 births, and Dr. Elisha P. Fearing, of Nantucket, Mass., whose experience embraces over 4,000, have each in their own practice witnessed but a single case. The late Dr. F. U. Johnson, of N. Y., had, in 1853, never seen a case.

instances, before the termination of the third day, in death from exhaustion.

To a more minute history and review of the class of hemorrhages, of which the above may be considered a general description, and to the discussion of questions thence arising, the remainder of this report will be devoted.

It is due doubtless to the rarity[1] of this malady that, up to 1850, it had been almost entirely ignored by systematic writers on the diseases of children. I have examined, I believe, nearly every work of any note on children's diseases, published in French or English, since the time of Underwood, and until 1850 only Underwood, Capuron, and Cheyne, more than merely allude to it,[2] while the first two of these writers do not seem to recognize its grave character. Writers on midwifery also usually treat it alike lightly. But, though not garnered in any storehouse of learning, facts, singly and in groups, are scattered here and there through the fields of medical literature, and to those interested in pædiatrics it may be of service for one to bind them into sheaves.

In English, French, German, and American journals, from 1752 to 1857, I find the records more or less complete of 80 cases. Dr. Francis Minot, of Boston, Mass., has kindly allowed me an examination of the table of cases, on analysis of which his almost exhaustive article on Hemorrhage from the Umbilicus in New-born Infants was based. From this source I derive 21 new cases. I have received, through the courtesy of medical gentlemen, in localities widely separated, statements concerning 76 additional cases, and one case has occurred under my own observation. These 178 cases I have submitted to careful comparison and analysis, and though conclusions based upon this number are not perhaps unas-

[1] At the Foundling Hospital at Paris, but a single case occurred in between 9,000 and 10,000 children admitted in two years, preceding Jan'y, 1853. Dr. Stephen Smith states (*New York Journal of Medicine*, July, 1855, p. 74) that, "in the Dublin Lying-in Hospital, no cases are reported in a period of twelve years, during which there were 6,654 births." Dr. Henry G. Cox informs me that in about 2,000 births at the Emigrants' Refuge, Ward's Island, N. Y., two instances of this hemorrhage existed.

[2] In writing the above statement, the description by Dr. D. F. Condie (*Treatise on the Diseases of Children*, 2d edition, Phila. 1847), of both forms of umbilical bleeding here considered, was strangely overlooked. From personal experience mainly, Dr. C. seemed to consider them among the most troublesome accidents occurring in young infants, that the practitioner is called upon to treat. A subsequent edition of the treatise contains an extended article on umbilical hemorrhage.

sailable, they will not be shaken, I think, in some important points by even a more complete array of facts.

I now propose to present first an account of what has been already published on the malady under discussion; then to record cases hitherto unreported, arranging the whole in tabular form, and finally to submit the conclusions educed by an analysis of all the facts.

The earliest record of hemorrhage from the umbilicus which I have been able to find, was made in 1752, by G. Watts, a practitioner of Hawkhurst, Kent, England, in the pages of the *Gentleman's Magazine*,[1] which, by its reception of medical contributions, partially supplied in England the place of a medical periodical. The words in which this case is narrated are descriptive with sufficient accuracy of many a case since. "Some time ago, an infant in this place, whose *funis umbilicalis* came off in the ordinary way on the 7th day after birth, was seized on the 4th day following with an hemorrhage from the umbilicus, which, notwithstanding the application of various styptics, with compress and bandage on the part, continued to recur by intervals in so violent a manner, that the poor babe expired within six and thirty hours from the beginning of its bleeding." The hemorrhage was supposed to be venous, "for the blood drilled in a uniform equable stream down the belly."

The writer stated that the same accident had been noticed several times within a few years, and solicited the opinions of others regarding it. I have been able to find but a single expression of opinion in reply. M. Sue, in his curious *olla podrida* of obstetrical lore,[2] published 27 years later, says: "For our part, we think that this accident will especially occur when the cord is not tied, or when it is tied too loosely, or too near the umbilicus. One may easily perceive the reason of it." Such criticism shows us that its author was not less ignorant in this matter than the object of his ridicule.

In 1786, Underwood published the first systematic treatise in the English language on the diseases of children. He speaks of this form of hemorrhage as attendant upon infants who are in a bad state of health during the month, but betrays an unappreciative knowledge of the malady in his remarks concerning its treatment.

[1] Gentleman's Magazine, London, April, 1752, p. 172.

[2] Essais, Historiques, Littéraires, et Critiques sur l'Art des Accouchements, ou Recherches sur, etc., par M. Sue, le jeune, etc. etc. Paris, 1779, p. 569.

"It requires, however," says he, "nothing more than the application of common styptics, with proper compress and bandage. The bleeding not appearing in the least to be critical, ought to be suppressed as soon as may be."[1]

Cheyne, in his essays published at Edinburgh[2] at the beginning of this century, describes a fatal species of jaundice which attacks infants a few days after birth. He attributes its fatality to "an original and incurable malconformation in the liver," which "malconformation is probably an impermeable thickening of the beginnings of the hepatic duct, or, as they are called, the *Pori Biliarii*."

As illustrative of this form of jaundice, he cites a case of a female child, remarkably stout and healthy at birth, but who became jaundiced on the third day. The cord fell off on the sixth day. The jaundice continuing, there was slight hemorrhage from the umbilicus on the 16th day, and on the 18th day a profuse hemorrhage, in consequence of which the child died. The autopsy showed that "the liver was full and firm, and of a dark green earthy color. The gall-bladder was quite empty and contracted." "The ducts also were contracted, firm, white, and like an artery, and, although pervious, contained no bile. The opening into the gut was perfectly free to the probe. When the substance of the liver was cut into, this appearance of firmness of the ducts was still discernible." Grumous blood was traced from the centre of the navel along the arteries, which, as well as the vein, were open.

Although, as we proceed, we shall not find hepatic obstruction by any means a constant condition in umbilical hemorrhage, we shall notice many cases attended by jaundice, and shall probably believe with Cheyne, that in some of them "the bleeding proceeded from the unhealthy change produced in the blood by the reception of the bile into the mass of fluids."

In the *Medico-Chirurgical Transactions* for 1822, a case is recorded which was observed by Mr. Pout.[3] A fine healthy male child was attacked with hemorrhage from the umbilicus on the 8th day after birth, the cord having separated on the 6th day. The navel was plugged with lint, and a compress and adhesive plaster were applied over that. The hemorrhage, however, was not arrested, and the child died in 27 hours after its commencement. At the autopsy

[1] Diseases of Children, London, 1789, vol. ii. p. 89.

[2] Essays on Diseases of Children, Edinburgh, 1801, Essay ii. p. 8.

[3] Medico-Chirurgical Transactions, vol. xii. p. 183. London, 1822.

the umbilical vein was found full of fluid blood, and nearly as large as a goose-quill. Both of the umbilical arteries were sufficiently large to admit a probe, and the left, from which it would seem the bleeding took place, contained a plug of coagulated blood. Both were so much retracted within the integuments that pressure would have been of little service in arresting the bleeding. Mr. Pout stated that in a similar case he should cut down upon the arteries and tie them. The mother of this child had previously lost two children under precisely similar circumstances, and had three fine children living.

Hufeland's Journal[1] of Feb'y, 1824, contains the record of a case of umbilical hemorrhage, reported by Dr. Elssaesser, of Stuttgard, occurring in a family of marked hemorrhagic predisposition. In this instance the child, which seemed healthy at birth, sickened on the 8th day, "and on the 14th day was attacked by a spontaneous hemorrhage from the navel (which some days before was apparently healed), that continued for 48 hours without intermission, when the child died."

Mr. Radford, in the *Edinburgh Medical and Surgical Journal* for July, 1832 (p. 1), communicates an article on hemorrhage from the umbilicus, with details of two new cases, referring, however, to several others which had occurred under his observation. In one case noted, compression failed to arrest the bleeding, and "after death the vein was found uncontracted." In the other case, there was a spontaneous cessation of the bleeding, within a few hours of its commencement, and a compress, supported by adhesive strips, being applied, no more hemorrhage occurred. Mr. Radford suspected the hemorrhage in this case to be arterial, and, in general, believes, that when the bleeding proceeds from the umbilical arteries, compression will usually check it, while bleeding from the umbilical vein, which he considers most common, is less amenable to treatment. He says (p. 4): "The opinion usually entertained as to the dangers arising from these two kinds of hemorrhage (as occurring in other parts of the body), is not true in the cases referred to in these observations. Venous hemorrhage from the umbilicus occurs frequently, and, in general, terminates fatally. Arterial hemorrhage, on the contrary, in this situation, is more rare and more fortunate in the result. I have already alluded to

[1] Journal der Practischen Heilkunde, Febr., 1824. London Med. Repository, new series, vol. iii. p. 506. Med. Review, Philadelphia, 1824, p. 279.

the insufficiency of compression to arrest bleeding from the umbilical vein. This is readily accounted for, when we consider the situation of the vessel, which is placed behind the flexible abdominal parietes, to which it is attached, there being nothing firm or resisting behind it, by the aid of which, a compress might effectually obliterate the calibre of the vessel." He recommends cutting down upon the vein and tying it as the only reliable treatment.

In the *Medico-Chirurgical Review* for July, 1834, is quoted, from *Journ. der Pract. Heilk.*, an instance of umbilical hemorrhage, chiefly interesting as an instance in which the hemorrhagic tendency was probably transmitted from the mother. The mother was of a delicate constitution, and *liable to profuse menorrhagia.* She was delivered of a boy March 29th. It seemed tolerably healthy, though fair or almost white. It suffered successively from jaundice, aphthæ, convulsions, and a diarrhœa, which proved fatal on the ninth day after birth. The navel string was constantly moist with a bloody serum, which kept oozing from its divided extremity, and resisted every styptic. When the tied portion fell off, pure blood trickled from the umbilicus, which was thus always covered with a coagulum. The scrotum in this infant had a dark purplish color. Three former children of this woman died on the 8th, 12th, and 14th days after birth, in consequence of bleeding from the navel.

Dr. Tiemann, of Bielefeld, reported,[1] in 1837, an instance in which umbilical hemorrhage was accompanied by jaundice and bleeding from the nose, mouth, and bowels.

In *Fricke und Oppenheim's Zeitschrift*, vol. v., 1841, Dr. Jecker reports a case of fatal hemorrhage, in consequence of non-obliteration of the umbilical artery. The cord fell off on the 7th day from birth. The hemorrhage commenced three days later. The *ferrum candens* was employed without benefit.

Dr. Churchill, in this year, in connection with the observation of Mr. Pout, alludes[2] to two fatal cases related to him by a friend, and recommends theoretically, in like cases, to fill the navel with fluid plaster of Paris, that it may "set," and so arrest the hemorrhagic flow.

Not far from this time, a case of fatal hemorrhage after separation of the cord on the ninth day, is reported in *Van Siebold's Journal* (10th Report, vol. ix.).

[1] Medicin Zeitschrift v. Vereine für Heilk., in pr., 1837, No. 42. American Med. Intelligencer, vol. iii. p. 44. Philadelphia, 1840.

[2] Operative Midwifery, p. 296. Dublin, 1841.

In the *Northern Journal of Medicine*[1] for August, 1844, Dr. A. B. Campbell, under the head "Icterus Gravis Infantum," relates three instances of fatal hemorrhage from the umbilicus, accompanied with jaundice. In two of them, occurring under his own observation, there was obstruction to the passage of bile into the duodenum. In one, "the gall-bladder was very small and collapsed, contained only a little mucus, and *formed a close sac, having no outlet, the excretory ducts leading from the gall-bladder and liver being absent.*" In the other case, "the gall-bladder contained a quantity of bile, which could not escape, *owing to an indurated plug of inspissated bile which occupied the ductus choledochus.*" In the third case there was no autopsy. In another case of icterus, related by Dr. Campbell, in the same paper, it is curious to observe that "there was no hemorrhage from the umbilicus, but jaundice came on the day after birth, and the abdomen was tumid from enlargement of the liver; the child lived to the age of six months; death then ensued, the liver having increased so as to fill the greater part of the abdomen. Upon examination, *neither a gall-bladder nor bile-duct could be discovered.*

In 1845, Dr. Ulsamer published[2] at Berlin an article entitled "Experiences in Midwifery," resulting from observations during the course of ten years. In this retrospect he notes one case of hemorrhage, after the separation of the cord, treated, with only temporary benefit, by the solid nitrate of silver, by styptic powders of kino and alum, and by filling the umbilical depression with soft wax. At the autopsy the umbilical vein was found patent.

During the last few years the record of observations has become more full. In 1847, M. Jeunin, of Voray, France, reported a case[3] where a "considerable hemorrhage," which had existed for three hours, and had been addressed by *argent. nit.* and the *fer rouge* unsuccessfully, was arrested by the ligature *en masse.*

Dr. Olliffe, on March 24th, of this year, read to the Parisian Medical Society a report of a case[4] accompanied by jaundice, in

[1] Northern Journal of Medicine, vol. i. p. 237. Edinburgh, 1844. Not having access to this journal, I rely on Mr. Manley's excellent paper in the London Medical Gazette, vol. xlv. p. 759. London, 1850.

[2] Neue Zeitschrift für Geburtskunde, vol. xvii. p. 271, 1845.

[3] Revue Médicale, Sept., 1847, p. 87.

[4] London Medical Times, April 3, 1847, vol. xvi. p. 116. This case attended and first reported by Dr. Olliffe, is often quoted, as communicated by M. Paul Dubois, who saw the child in consultation with Dr. O.

which the ligature *en masse*, advised by M. Dubois, arrested the bleeding from the umbilicus, but the child continued feeble, and died afterwards from intestinal hemorrhage. Examination, *post-mortem*, showed the liver to be large, its color natural; gall-bladder small and empty; the hepatic vessels healthy.

In this year, also, Dr. Simpson read to the Obstetrical Society of Edinburgh,[1] a report of two fatal cases which occurred in India. The subjects were children of the same parents. In both there was a degree of jaundice. Treatment by pressure and styptics was of no avail, and both died on the 11th day from birth. Dr. Keiller also stated to the same society[2] a case in which the bleeding proceeded from the root of the funis, before its separation. Though the hemorrhage was arrested by a ligature, the child died a few minutes afterwards.

During 1848 there occurred in this country the two fatal cases of Dr. Marsh,[3] of Patterson, N. J., and the case of Dr. Cock,[4] the latter accompanied by icterus and ecchymotic spots. In France, M. Thore reported a case[5] associated with purpura. The hemorrhage was controlled by nitrate of silver, but the child died at the end of 20 days, with purpura and muguet. M. Thore cites also a case published by M. Villeneuve. M. Emile Dubois, in an excellent inaugural thesis[6] on umbilical hemorrhage, in addition to the cases of Mr. Pout, MM. Jeunin and Thore, and Dr. Olliffe (attributed to M. Paul Dubois), already mentioned, furnishes an hitherto unpublished observation occurring under his own notice. In this case the hemorrhage was arrested by the ligature, as recommended by Professor Dubois, but the child died 12 days after of enteritis. The umbilical vein and the *ductus venosus* were contracted, but not impermeable. The umbilical arteries seemed like whitish cords, with a narrow canal and thick walls. They were friable, and each contained a filiform and adherent clot. There was no trace of peritonitis.

Early in 1849 Mr. Edward Ray read before the South London Medical Society,[7] a paper, one object of which was to demonstrate

[1] Monthly Journal of the Medical Sciences, July, 1847. Edinburgh.

[2] Ranking's Abstract, No. 6, p. 270.

[3] New Jersey Medical and Surgical Reporter, vol. i., 1848.

[4] New York Annalist, vol. ii. p. 189.

[5] Gazette Médicale de Paris, Mars 11, 1848.

[6] De l'hémorrhagie ombilicale après la chute du cordon. Theses de Paris, 1848, No. 241. Archives Générales, Oct., 1849, p. 188.

[7] London Medical Gazette, vol. xliii., p. 423, March 9th, 1849.

that the male sex is especially liable to this form of hemorrhage; and to establish the fact of its frequency in a succession of *male* infants of the same family. Mr. Ray, in addition to the cases of Messrs. Pout, Radford, and Keiller, adduces three new cases, in children whose mother he had attended in her sixth confinement. The three male children of this lady all died with hemorrhage from the navel, accompanied by jaundice, the last being also purpuric, while three female children were not thus attacked. The general truth of Mr. Ray's proposition is now established, though exceptional cases are by no means rare, as *e. g.*, those mentioned by Drs. Bowditch and Anderson, to be immediately referred to.

In July of this year Dr. John Homans, of Boston, Mass., published[1] seven cases of umbilical hemorrhage. Immediately before their publication Dr. H. J. Bowditch read to the Boston Society for Observation in Medicine and the Collateral Sciences, a paper[2] detailing fully two cases which had occurred in his own practice, and analyzing ten others gathered from practitioners in Boston. Seven of the ten, however, were the same cases as those above referred to, published a few days afterward by Dr. Homans. The two children who were the subjects of original observation, as detailed by Dr. Bowditch, were a daughter and son, the first and fourth children of the same lady. Her second and third children were boys, and were not attacked by hemorrhage. Dr. Bowditch gives the following *résumé* of facts regarding his cases. "In these cases both children died of hemorrhage from the navel (on the twentieth and fourteenth days after birth). They were of both sexes, while males, according to authors upon the hemorrhagic tendency, are more liable than females. In both cases the cord came off quite well, and without external injury; one on the third, the other on the fifth day before the hemorrhage commenced. In both the parts seemed entirely cured, and presented no discharge for several days before the fatal oozing took place. In both all local applications seemed, in a very short time, to excite rather than to check the disease. In both very violent surgical operations were resorted to, without the least benefit. Death took place in one on the third, in the other on the sixth day after the attack. One had white dejections from birth, both had purpuric extravasations and bloody dejections at last. At the autopsy of one, disease of liver and non-coagulated blood were

[1] Boston Medical and Surgical Journal, vol. xl. p. 449, July 11th, 1849.

[2] American Journal of the Medical Sciences, Jan'y, 1850, p. 63.

found; no opening or apparent disease about the navel, or vessels leading thereto, was found." The surgical operations referred to were, in the one case, the ligature *en masse*, in the other, the actual cautery.

Before the close of the year, Dr. W. C. Anderson, of Staten Island, N. Y., communicated to the *Boston Medical and Surgical Journal*,[1] a report of two cases which seem to have suggested to the writer's mind the belief, which wider observation has since established as an accepted medical doctrine, that there exists an intimate connection between the reabsorption of the constituents of the bile into the circulation, or their non-elimination from the blood, and the hemorrhagic tendency. I do not find that hemorrhage, as a *result* of icterus, had been before noticed, though their association in disease was known to be frequent. Dr. Bowditch, in his paper heretofore referred to, and published simultaneously with Dr. Anderson's communication, seems to have been led by a consideration of Dr. Campbell's cases, with his own, and instances of hemorrhage in adults suffering from disease of liver, to almost the same opinion, though he enunciates it only by implication.[2]

Dr. Anderson reports of the first case, which was seen by him, that a female child died on the 12th day from birth, after an hemorrhage from the navel of 28 hours, accompanied by severe jaundice and purpuric spots. The autopsy showed the liver large and reddish-brown. The gall-bladder was distended with greenish-yellow bile. The hepatic and cystic ducts just beyond their junction terminated in a *cul-de-sac*, the place of the common duct being occupied by impervious tissue. The tissues were all deeply tinged with bile. The mucous membrane of the stomach was ecchymosed. The fœtal openings were all obliterated, except the umbilical vein, from which the bleeding had proceeded. In view of the greater liability of jaundiced persons to suffer hemorrhagic discharges, it is noteworthy that the mother of this child had previously a daughter who, at the age of four months, was affected with jaundice complicated by purpura, which terminated favorably.

[1] Boston Medical and Surgical Journal, vol. xli. p. 440, Jan'y 2d, 1850.

[2] It is somewhat remarkable to notice that, though in France, during this same year, M. Monneret published a memoir calling attention to hemorrhages of hepatic origin (*Archives Générales de Médecine*, June, 1854, p. 643), yet neither there, nor in an essay published in 1854 on hemorrhages produced by diseases of the liver, does he make, on this point, a more definite statement than that "it is difficult to explain the development of hemorrhages which proceed from the diseased liver, otherwise than by alteration of the blood." (*Loco cit.*, p. 655.)

The other case, related by Dr. Anderson, occurred, as did the first, in the practice of Dr. S. R. Smith, and presented the same features. Death occurred on the 8th day, from hemorrhage, preceded by jaundice and purpuric spots. There was no autopsy. In this case too the mother had previously a daughter who died with jaundice and purpura on the 5th day, but without hemorrhage. In the two instances just noted, of exemption in females from external hemorrhage, did the influence of sex intervene? The existence of purpuric eruption in both cases, shows that it did not prevent the change in the blood, on which hemorrhage probably most frequently depends.

In 1850 Dr. John Manly read before the Abernethian Society of London, a very interesting paper on hemorrhage from the umbilicus after the falling of the cord,[1] in which he recapitulated twelve cases of Ray, Campbell, Bowditch, Thore, Dubois, and Olliffe, to which he added a case recently observed by himself. In this case the hemorrhage, which commenced about the 12th day after birth, and was accompanied by jaundice, resisted the employment of pressure, styptics, and the actual cautery, and resulted in death on the fourth day.

An instance of hemorrhage from the umbilicus, preceded by bleeding from the scrotum, and followed by bleeding from the mouth, tongue, gums, stomach, and bowels, the skin also becoming ecchymotic on slight pressure, was also reported this year by Dr. Amyot, in the *London Medical Times*.[2]

For nearly two years no records of this malady appear, but in 1852, just a century after the simply stated case of Watts, Dr. Francis Minot, of Boston, read before the Boston Society for Medical Improvement, an essay on Hemorrhage from the Umbilicus in New-born Infants,[3] based on an analysis of 46 cases. This essay, from the thoroughness of its analysis of the facts possessed by the writer, and its careful rejection of improper cases, is peculiarly valuable. It is to be regretted that Dr. Minot did not attach to his paper, as it was given to the profession, the carefully tabulated array of facts, on which it was based. A malady, as yet but indistinctly recognized, has need of all facts which may elucidate its history. Dr. Minot believes "that idiopathic hemorrhage from the

[1] London Medical Gazette, vol. xlv. p. 755 (May, 1850).

[2] Vol. xxi. p. 449, June, 1850.

[3] American Journal of the Medical Sciences, vol. xxiv. p. 310, Oct., 1852.

umbilicus in young infants, is only one of the various manifestations of the hemorrhagic diathesis, which, in other cases, is exhibited in bleeding from the gums, mouth, stomach, intestines, &c., and in the appearance of purpuric spots, beneath the skin in various parts of the body." In proof of this, he cites "the concurrence of these phenomena with umbilical hemorrhage. * * * * Another argument is the thin and watery condition of the blood, and its great deficiency in fibrin, whereby mechanical means become almost wholly inefficacious to arrest its flow" (p. 314). He fully recognizes and makes prominent its dependence on a constitutional cachexy.

During this year, Dr. W. C. Bailey, of Spencertown, N. Y., added to the published records of this malady, the history of three fatal cases seen by him.[1] In two, the children, a boy and a girl, had the same mother. Another boy and girl, of the same mother, had escaped. Both of the children attacked "died from prostration induced by hemorrhage, both had bloody dejections from the bowels, and one from the urinary passage. In both there was more or less extravasation of blood under the cuticle; in one it escaped from the mouth." Both had, at the commencement, clay-colored stools, and one jaundice and purpura. In the latter the bleeding was temporarily arrested by the ligature *en masse*, but recurred seven days after the separation of the needles, and proved fatal on the 22d day from its commencement. The other case, reported by Dr. Bailey, is chiefly remarkable for the spontaneous cessation of the bleeding, as in one of Mr. Radford's cases. In this, however, death ensued in eight hours.

In 1853 M. Henri Roger, Physician to the Foundling Hospital at Paris, read before the Medical Society of the Parisian Hospitals, an excellent memoir[2] on hemorrhage from the umbilicus after the falling of the cord, founded mainly on the cases of Pout, Radford, Ray, More, Dubois, and Olliffe. The only cases mentioned in it, previously unpublished, were, one occurring under his observation at the Foundling Hospital, and, as before mentioned, the only case which had occurred at the institution for two years, out of more than 9000 new-born infants; and an instance of the accident in twins, communicated by M. Danyau. M. Roger considers the patency of the umbilical arteries, from which, contrary to the

[1] American Journal of the Medical Sciences, April, 1852, p. 432.

[2] L'Union Médicale, vol. vii. pp. 138—147. Paris, Mars 24, 26, 29, 1853.

opinion of Radford, he believes the bleeding generally to occur, to be due frequently to arteritis, as shown in some instances where the arteries were found after death to be dilated, friable, ulcerated, and uncontracted. Noting, too, that in the cases quoted by him, hemorrhage had commenced in no instance later than the 13th day after birth, he would establish the practical inference that, after the second week of existence, infants have an immunity against umbilical hemorrhage, another illustration of the danger of generalizing in medicine from a small number of facts.

In this year Mr. W. Gage communicated to the *Western Lancet*[1] an instance of this variety of hemorrhage, which, after resisting astringents and styptics for several days, was arrested permanently, by binding down with a bandage around the body, a lady's thimble, with its concavity towards the abdomen, the rim encircling the bleeding surface.

During this year also Dr. George A. Otis published a paper on "Hemorrhage from the Umbilicus in New-born Infants,"[2] embodying an excellent *résumé* of what had been given to the public, in French and English, since the time of Pout. His deductions are based on 49 cases, excluding those counted twice.[3] He adds too one case to the recorded list. It presents the features now so well known to us. Hemorrhage, on the 14th day from birth, accompanied by jaundice and purpura, with bloody stools, resisting, except temporarily, compression styptics and the argentine cautery, and, though yielding to the ligature *en masse*, leading to death 18 hours after, and 40 hours from the commencement of hemorrhage.

Two cases were reported in 1854. One by Mr. Willing, communicated to the *Medical Times and Gazette*,[4] London. Jaundice was present during the progress of the disease, and on examination after death, the liver was found to be of a darker color than natural, and much gorged with blood. The other case, which was complicated with congenital ichthyosis, was reported to the Boston Society for Medical Improvement, by Dr. A. A. Gould,[5] who, soon after, witnessed in a child of the same parents, a recurrence of this com-

[1] Sept., 1853, p. 552.

[2] Virginia Medical and Surgical Journal, vol. ii. p. 49. Richmond, 1853.

[3] The great difficulty of avoiding repetitions in statistical papers, seems to demand that in all such articles the cases should be tabulated with reference to date and authority.

[4] March, 1854, p. 287.

[5] American Journal of the Medical Sciences, vol. liv. p. 356, April, 1854.

plication, and subsequently published an account of both cases.[1] In the first case, beside the affection of the skin, it was noticed that the alvine discharges, though copious, were destitute of bile, the surface was jaundiced, with amber-colored urine, and the hemorrhage yielding but temporarily to astringents, compression, and the nitrate of silver, proved fatal on the third day from its commencement. An autopsy revealed the pervious state of all the umbilical vessels. The liver was very dark-colored, friable, gorged with blood; the gall-bladder flaccid, containing a little clear fluid, and the cystic and common ducts were impervious. The second child presented the same general features. The first discharge from the bowels was dark, like ordinary meconium, but the dejections became at once straw-colored, and then quite white. Jaundice was present on the eighth day from birth, at which time the hemorrhage commenced, and little effort being made to control it, death ensued in two days. The examination, post-mortem, showed the umbilical vessels open, the liver congested, and of a bronze-green color, the gall-bladder partially filled with a gelatinous fluid, and the cystic and hepatic ducts apparently closed.

The mother of these two children lost her first child, which also had congenital ichthyosis. It died hydrocephalic on the 16th day from birth.

During the summer of 1855, Dr. Stephen Smith, of New York, communicated to the *New York Journal of Medicine and the Collateral Sciences*,[2] an article previously read before the Society of Statistical Medicine, entitled, "Remarks on Hemorrhage from the Umbilicus of Infants, with a table of 79 cases." Seventy-four of these cases are of the variety of hemorrhage now under consideration.[3] Dr. Smith has tabulated his cases in an admirable manner, for which the student of this subject will thank him all the more heartily from having noted the deficiencies, in this regard, of previous writers. I acknowledge my indebtedness to Dr. Smith's table for five cases.

During this year German medical literature was enriched by the publication at Leipsic of a monograph on the "Hemorrhagic Diathe-

[1] Boston Medical and Surgical Journal, vol. liii. p. 109, Sept. 6th, 1855.

[2] New Series, vol. xv. p. 73, July, 1855.

[3] Two (Nos. 72 and 76) are instances of traumatic hemorrhage. No. 51 is an example of hemorrhage from a fungoid excrescence, as described at the beginning of this report. I have excluded two other cases from my table (Nos. 18 and 25), through inability to verify the reference.

sis, or the Blood Disease," by Dr. Ludwig Grandidier.[1] His 13th chapter treated of the "Hemorrhagic Diathesis in the Newly-born, and Bleeding at the Navel." It is a fair exponent of modern knowledge as to the history, pathology, and treatment of this constitutional malady. Its statistical conclusions are, however, much impaired in value by the error so fatal to accuracy, of including the same cases more than once, in making up the summary from which deductions are drawn.

A few other isolated facts have since been observed, and to a German physician are we again indebted for an essay on idiopathic bleeding from the navel in new-born children.[2] Dr. Steinthal, of Berlin, has, in connection with his *résumé* of what had been previously published, added three observations noted by Dr. Lode and himself. He quotes from Dr. Minot's analysis, but does not apparently tabulate anew the phenomena of other cases.

Cases hitherto unpublished. CASE I.—I attended Mrs. L., æt. 26, in her first confinement, on the 13th of May, 1855. She was a healthy woman, and had a short and easy labor. The child, a boy, was rather small, and for 36 hours after birth, seemed to suffer from colicky pains. On the second day after birth, the child became jaundiced. The dejections were normal, containing bile; the urine was so deeply colored as to stain the napkins of a saffron hue. The conjunctivæ were injected. The cord fell off on the sixth day, and the congestion of the conjunctivæ had disappeared. On the morning of the seventh day the child vomited blood in small quantity. On the afternoon of the same day I was called to the child, whom I found bleeding from the umbilicus. The blood oozed steadily from the depression, but no point whence it issued from any considerable vessel could be determined. The application of cold diminished the flow, and a conoidal compress of raw cotton, saturated with a strong solution of alum, and pressed down into the umbilical depression by a bandage around the body, completely stopped it. The cessation, however, was but brief. Soon after my departure, having requested that I should be called in case of a return of the bleeding, the hemorrhage recurred, and the rude

[1] Die Hämophilie, oder die Bluterkrankheit. Leipzig, 1855.

[2] Ueber die idiopathische Nabelblutung neugeborener Kinder. Von Sanitätsrathe Dr. Steinthal, prakt. Arzte in Berlin. Journal für Kinderkrankheiten, Jan. u. Febr., 1857.

expedients, of the attendants, for checking it, accomplished nothing. No other professional aid was sought, and the child died on the morning of the 8th day from birth, 16 hours from the commencement of the hemorrhage. The body was of a bright saffron hue after death. No autopsy could be obtained.

For the following interesting record I am indebted to the courtesy of Dr. F. T. Bumstead, of N. Y., from whose note-book I derive

Case II.—June 26th, 1855. Henry S., æt. 15 days.

History.—The mother of this infant is a stout, healthy-looking German woman, aged 37 years. A resident of this country two years. She reports that her health has been always good, and she has always been accustomed to hard work. This is her fourth child. The first two, boys, are still living. The third and last, previous to this, a girl, was born in Germany 2½ years ago, became jaundiced three days after birth, which symptom disappeared in time, but the child died at the age of three months, of convulsions. None of the previous children have had umbilical hemorrhage. During the past winter Mrs. S. has suffered much from poverty and want, her food being small in quantity, and of the poorest quality, but so far as can be ascertained from her account, neither exclusively animal nor vegetable. She was delivered of the present child on the 9th of this month, was attended by a midwife. Three days after birth the infant became jaundiced, generally over integument. Its bowels at that time were freely open, and the discharges of a yellow color. When about a week old, the infant began to vomit several times daily, and the vomited matter contained traces of blood. The cord fell off on the fifth day. About the eleventh day a discharge of blood was first noticed from the umbilicus, which has continued till the present time. There has never been any blood in the stools.

Present appearance.—Child well developed, and rather large; its skin of a deep icteritious tint, which extends to ocular conjunctivæ, and soft palate. Back of hands and phalanges of fingers of a well-marked purplish hue; lower extremities faintly mottled with purple. Lips exsanguine; mucous membrane presents numerous small aphthous spots. Child's general strength appears to be good; its cry is strong, and it nurses well. Respiration normal. Pulse 150, obliterated on slight pressure. Tongue somewhat furred and moist. Fecal discharges semi-solid, of a bright yellow color. Urine strongly

yellow. Blood evidently serous in its character, and of a fainter color than normal arterial blood, is oozing from the general surface of umbilicus. It shows no tendency to coagulate.

Treatment.—A small pledget of lint, wet with tr. ferri chloridi, was applied to bleeding surface, and held by the point of the finger till the hemorrhage was apparently arrested, when a graduated compress was placed above it, and the whole retained by strips of sticking plaster. Ordered the following internally: ℞.—Quiniæ sulphatis, gr. viij; acidi tannici, gr. v; aquæ, ℥ij.—M. A teaspoonful every three hours.

June 27. Hemorrhage was not permanently arrested by yesterday's application. It returned in the afternoon, and has soiled three binders since. Patient has vomited four or five times, mostly after taking medicine; a little blood in ejecta, three dejections of yellow color and good consistency.

Two curved surgical needles are now inserted at right angles beneath the base of the umbilicus, and a waxed ligature wound round each in a figure of 8. Omit prescription of yesterday. ℞.—Tr. ferri chloridi, tr. opii camphorat., āā ℥ij; syr. simp., ℥ij.—M. A teaspoonful every three hours. ℞.—Hydr. cum cret., gr. ij; P. rhei, gr. j.—M. Ft. pulv. Every night and morning.

28*th.* Hemorrhage entirely arrested. Parts about the ligature swollen. Abdomen generally tender on pressure. Icterus as before, perhaps not quite as deep. Lower lip drawn in, and mental fold deep. Has not again vomited; no dejections. Does not nurse with as much avidity. If laid on its right side it shrieks with apparent pain. Pulse 160. Had several short convulsive attacks during the night.

29*th.* Face more contracted and anxious. Pulse 184, irritable. Respiration 74. Had convulsions, lasting five minutes, repeatedly. During the night two small greenish dejections, containing no blood. Has taken but little of the mixture, but takes powders regularly. Respiratory murmur of chest normal. Blood is again flowing from umbilicus, oozing from the general surface and from the points of insertion of the needles. This commenced last evening. Parts about umbilicus excessively swollen, and of a purplish hue. The application of an additional ligature is considered unadvisable. Purpuric spots about back of hands less marked.

30*th.* Frequent convulsions during the night; child died at 10 this A. M.

Autopsy.—4 hours P. M. External appearance. Body very well

developed. Icterus as during life. Parts about ligature very much swollen, and of a deep purple color, to the extent of an inch. Fine sub-integumental crepitus is felt on palpation over whole abdominal surface. Limbs stiffened. Fingers strongly flexed, and thumbs turned into palms of hands.

Internal examination.—On making abdominal incision, the parts about ligature are found to be a confused mass of disorganized tissue, and effused blood of a dark venous color. Lungs healthy; except at posterior portion. Peritoneal cavity, and external cavity of intestines, normal. Both umbilical arteries are pervious to the sloughy mass surrounding ligature. Umbilical vein is obliterated to about half an inch from umbilicus. Ductus venosus still pervious, but apparently contracted in diameter. Liver of a uniform deep bronze color, externally and internally. Weight, 9 oz. Its substance firm. On pressure of its substance, a moderate quantity of venous blood comes from cut surface, apparently from divided veins. Gall-bladder, of flesh color externally, is filled, but not distended, with a viscid fluid, of the consistency of white of egg, of a very faint yellow color, holding in suspension minute whitish flocculi. These flocculi, examined under the microscope, present irregularly-shaped cells, filled with granules, but no nuclei. An attempt to pass a fine probe, from the gall-bladder through the cystic duct to its union with the ductus communis choledochus, was at first unsuccessful, but after repeated efforts, a small pin was passed, with its head directed forwards to the junction of the ductus communis. The hepatic duct was pervious upwards to the liver; but the liver having been severed from its connection with the duodenum, it was impossible to ascertain the condition of the ductus communis throughout its whole extent, but there was no evidence of constriction of this duct. Heart normal. Foramen ovale will admit a crow-quill. Ductus arteriosus pervious, but its walls are lined with lymph, as if its obliteration was commencing. Internal surface of arteries and veins normal.

Case III.—(Communicated by Dr. Edwards Hall, of N. Y.) Mrs. B. was delivered, Jan'y 10th, 1855, of an unusually robust male child, which weighed at birth 12 pounds, and was apparently every way perfect. During the first week an eruption of the nature of strophulus made its appearance, attended with more than ordinary perspiration; the eruption, after about 48 hours continu-

ance, suddenly receded, and the child became restless and feverish, and nursed more greedily, while, at the same time, the urine was diminished. About the 24th inst., icterus made its appearance, and soon after an erysipelatous swelling of one of the testicles, followed soon after by swelling of the other. On the 25th the left arm began to swell, rapidly extending from the middle of the arm to the fingers. It presented very much the appearance of erysipelas. On the 30th, fluctuation was very distinct, so much so that I expected the abscess would soon burst at one point. As it appeared to be large, I thought it safer to make a slight puncture, and thus control the escape of matter, than to leave it to itself. To my surprise, I found nothing but blood, and closed the puncture by means of adhesive straps. About six hours after, I again opened the tumor, but with the same result. On this day, or the day following, oozing of blood began at the umbilicus, which had entirely healed. No means were of the least use in arresting the hemorrhage. It steadily increased, together with the tumor on the arm, which had reached the shoulder, and extended to the axilla, and under the pectoralis muscle. The little sufferer expired on the 2d of Feb'y, aged just three weeks. The surface, at time of death, presented a highly jaundiced appearance, with occasional petechial spots.

Case IV.—(The notes of this case and of Case V. were communicated by Dr. S. S. Purple.) A male child, born of healthy parents, at full term. Cord fell off on the third day. On the fourth, presented symptoms of a mild attack of jaundice. On the fifth day, hemorrhage from the navel set in, when it was observed that ulceration existed. The ulceration was treated with a solution of tannin, and compression by means of scrapings of sole leather. On the seventh day, severe hemorrhage from the bowels set in, from which the child died. The bleeding from the navel was not severe, and was arrested by the applications used.

Case V.—Female child, feeble, father syphilitic. Cord separated. On the 6th day after birth, hemorrhage from the navel set in. Child was then severely jaundiced. Simultaneously with the occurrence of bleeding from the navel, purpuric spots appeared on the surface. The bleeding being severe from the navel, sulphate of copper, tannin, compression, &c., were used to no avail. Bleeding from the nose, mouth, &c., set in. The child emaciated rapidly,

and died on the 10th day. In neither of the last two cases could an autopsy be obtained.

CASE VI.—(Communicated by Dr. George Benedict, of South Amboy, N. J.) Mrs. P. J. was confined, June 19th, 1851, of a male child; both mother and child did well until about the 6th day after the separation of the umbilical cord of the child. Hemorrhage of the umbilicus then occurred. I immediately applied powdered alum to the source of hemorrhage, over that a compress of cotton batting, and retained them by strips of adhesive plaster. No further hemorrhage took place, the dressings not being removed for four days. The child was alive and well in Dec., 1854.

CASE VII.—(Communicated by Dr. Benedict.) A female child, born in the 8th month, Sept. 14th, 1851, was healthy and doing well, with the exception of being much jaundiced, until one week had passed. The cord had separated, and at the end of the first week, hemorrhage from the umbilicus took place. Topical astringent applications checked the bleeding temporarily. It returned again in two or three days, was again checked, and after recurring several times, the child died at the end of the third week from birth.

CASE VIII.—(Communicated by Dr. J. H. Shearman.) Mrs. F., a feeble woman, who had previously lost one child of hydrocephalus, was delivered, in 1846, of a child at 7 months. The funis came away about the 7th day, from which time, hemorrhage from the umbilicus continued, more or less, until the child died, three or four days after. The employment of compression, and of the solid nitrate of silver, was of no benefit. The child bled also at the mouth, and a little at the ears. The blood was very fluid. There was no suspicion of syphilitic taint.

Besides the cases thus detailed, I present more brief memoranda of thirty additional cases, communicated by the gentlemen under whose notice they occurred. Dr. Edward Delafield has seen two cases. One which had jaundice died. The other recovered. Dr. Henry G. Cox, in 2000 births which have occurred under his supervision, at the Ward's Island Hospitals, has seen two cases. Both of the children were jaundiced. Both died. One was a feeble child. The mothers of both had been much depressed, and insufficiently nourished, during gestation. The hemorrhage came

on from one to three days after the falling of the cord. There was no suspicion of syphilis in either case. In private practice, Dr. Cox has seen one case. Not jaundiced. Powdered alum was applied to umbilicus, with pressure. The hemorrhage was permanently arrested.

Dr. J. T. Metcalfe has seen four cases, all were icterized, and all died.

Dr. Charles Henschel has attended two cases, both of which proved fatal. In one, the umbilical depression was filled with alum. In the other with tannin, with no evident benefit. One of the children was a girl; sex of the other not noted.

The Hon. ———, M. D., of North Carolina, has related to me the fact of two healthy children, of Mrs. L., also healthy, dying of umbilical hemorrhage within 48 hours after the falling of the cord, after the employment of astringents, and styptics with compression. The children, one male, the other female, were not twins.

Dr. Charles E. Isaacs has seen, in Niagara Co., at Baltimore, Md., and in the City of New York, three cases, of which one was icterode. All died.

Dr. C. R. Gilman has seen two cases. Neither jaundiced. Both recovered by use of pressure, and, perhaps, tannin.

Dr. B. F. Barker has been called in consultation to two male children, bleeding from the umbilicus. Powdered matico, with pressure, having failed, save partially, to arrest the flow of blood, the umbilicus was filled with powdered plaster of Paris, which proved effectual. There was no more bleeding, and the children recovered.

Dr. H. P. Dewees has reported to me one case. The application of alum and powdered ergot was unsuccessful, but pressure being made by a conical plug of cork, the hemorrhage ceased.

Dr. J. S. Thebaud was called to see a son of Dr. ———. The cord had fallen off on the 6th day, which was followed by hemorrhage. Compression was sufficient to check the bleeding, which did not recur on the removal of the compress, at the end of four days.

Dr. E. T. Winter saw a child in which the cord fell off on the 6th day from birth. Seven days after, bleeding from the umbilicus came on. Hemorrhage had existed 24 hours when Dr. W. saw the child. Alum and the solid nitrate of silver had been applied without benefit. The surface was yellow. Dr. W. filled the umbilical depression with tannin, and bound over it a compress spread with

moistened tannin. The compress was left on several days, and no more hemorrhage occurred.

Dr. George T. Elliot, Jr., has seen three cases. Styptics, compression, in one instance the ligature *en masse*, and in one, filling the umbilicus with plaster of Paris, all proved useless. All the patients died.

Dr. Joel Foster was called to a feeble male child in consultation. Icterus was present. The ligature *en masse* was applied, which arrested the bleeding, but ecchymosis around the ligature ensued, and the child died.

Dr. John L. Vandervoort has had two infants under his charge, with umbilical hemorrhage, after the falling of the cord. They were both males. One a black child. The white child was jaundiced. Both died, one 24 hours after the hemorrhage commenced; the other at the end of two days.

Dr. A. Gescheidt had in charge a feeble male infant, born of healthy parents. Two days after birth it became deeply jaundiced. The cord fell off on the 8th day, simultaneously with which a bleeding from the umbilicus commenced. It was treated without benefit by the application of compression, astringents, and styptics; and the ligature *en masse*, as recommended by Dubois, was equally unservicable. The hemorrhage terminated fatally 48 hours from its commencement.

Dr. F. A. Thomas saw, in 1853, at the Colored Home, in the city of New York, a healthy light mulatto child, born of a healthy mother. The mother was very dark. The cord separated on the 7th day, and an oozing of blood from the navel was almost immediately noticed. It was treated by astringents, the solid nitrate of silver, and compression, but without benefit, and died seven days after.

For the outline of other cases, more recently communicated to me, I must refer to the table of cases hereto appended.

Table of 178 *Cases of Hemorrhage*

NO.	AUTHORITY AND REFERENCE.	SEX.	HEREDITARY HISTORY, CHARACTER OF LABOR, ETC.	CONDITION AT BIRTH.	DATE AFTER BIRTH WHEN	
					CORD SEP'D.	HEM. BEGAN.
1	G. Watts (Gentleman's Magazine, Lond., vol. xxii. p. 172).				7th day.	11th day.
2	Dr. John Cheyne (Essays on Diseases of Children, Edinburgh, 1801, essay ii. p. 8).	F.		Remarkably stout and healthy.	6th day.	16th day.
3	G. Pout, Esq. (Med. Chir. Trans., vol. xii. p. 183, Lond., 1822).	M.	Mother had lost two other children (Nos. 4 & 5, infra), under like circumstances, and had three fine children living.	Healthy.	6th day.	8th day.
4	G. Pout, Esq. (loco citat).		Same mother as Nos. 3 & 5.			
5	G. Pont, Esq. (loc. cit.).		Same mother as Nos. 3 & 4.			
6	Dr. Elssaesser (Hufeland's Jour. der Pract. Heilk., and Med. Rev., Phila., 1824, p. 279).	M.	Hemorrhagic tendency in family; parents and grandparents healthy.	Appeared perfectly healthy.		14th day.
7	Thomas Radford, Esq. (Edin. Med. & Surg. Jour., vol. xxxviii. p. 4, 1832).				7th day.	7th day.
8	Thomas Radford, Esq. (loc. cit.).				8th day.	8th day.
9	Med. Chir. Rev., vol. xxv. p. 232, from Jour. der Pract. Heilk.	M.	Mother delicate and liable to profuse menorrhagia; had lost three children from umb. hem.; three others, though delicate, showed no hemorrhagic tendency.	"Tolerably healthy, though fair or almost white."		
10	Med. Chir. Rev. (loc. cit.).		Same mother as Nos. 9, 11, & 12.			
11	Med. Chir. Rev. (loc. cit.).		Same mother as Nos. 9, 10, & 12.			
12	Med. Chir. Rev. (loc. cit.).		Same mother as Nos. 9, 10, & 11.			
13	Dr. Tiemann (Amer. Med. Intelligencer, vol. iii. p. 44, Phila., 1840, from Med. Zeits. v. Vereine für Heilk. in pr., 1837, No. 42).	M.		Tender and feeble, jaundiced.	3d day.	7th day.
14	Dr. Jecker (Fricke & Oppenheim's Zeits., 1841, vol. v.).				7th day.	10th day.
15	Van Siebold's Journal, vol. ix.				9th day.	
16	Dr. Churchill (Op. Midwifery, Dublin, 1841, p. 296).					
17	Dr. Churchill (loc. cit.).					
18	Dr. A. B. Campbell (Northern Jour. of Med., vol. i. p. 237, Edinb, 1844).	F.	Mother had previously two healthy children.		5th day.	9th day.
19	Dr. A. B. Campbell (loc. cit., also Lond. Med. Gazette, 1850, vol. xlv. p. 757).	M.	Mother had previously two healthy girls.		5th day.	7th day.
20	Dr. A. B. Campbell (loc. cit.).	M.	Same mother as No. 19.		6th day.	7th day.

from the Umbilicus in Infants.

SYMPTOMS.	TREATMENT.	RESULT.	AUTOPSY AND REMARKS.
"The blood drilled in an equable uniform stream down the belly," recurring at intervals.	Styptics, with compression.	Death within 36 hours.	The hemorrhage "seems to have proceeded from the vena umbilicalis, and in no wise from the arteries, for the blood drilled," &c., vide Symptoms.
Became jaundiced the third day after birth; occasional fits of pain; costiveness; stools white, with streaks of bile; urine stains linen deeply; emaciated on 13th day; slight hemorrhage on 16th day; profuse and fatal on the 18th day.	Infusion of senna for costiveness.	Death 36 hours after hemorrhage began.	Umbilical vein pervious and empty; arteries open and containing grumous blood; intestines tinged from bile *in their coats;* mesenteric glands large and white; liver full and firm, and of a dark-green earthy color; gall-bladder empty and contracted; ducts contracted, bnt pervious, firm, and white; section of liver showed same firmness of ducts.
Bleeding continued steadily till death; point whence it issued not distinguishable.	Plugging with lint, and pressure by means of adhesive straps and roller.	Death 27 hours after hem. began.	Umbilical vein dilated and full of fluid blood; umb. arteries pervious, retracted, and the left containing coagulated blood.
		Death.	
		Death.	
Illness began on the 8th day, with drowsiness and rattling in the throat; bled continuously until death.		Death in 48 hours.	Navel was apparently healed some days before hemorrhage began.
	Graduated compress and adhesive plaster.	Death in 15 hours.	Umbilical vein uncontracted; umbilicus sloughy, dark, and ragged.
	Compress and adhesive strip.	Recovered.	Hemorrhage ceased spontaneously.
Jaundice, aphthæ, convulsions, and diarrhœa; oozing of bloody serum from cut end of cord; after its separation, pure blood from umbilicus; scrotum purpuric.	Styptics.	Death on the 9th day after birth.	
Bleeding from the navel.		Death on the 8th day from birth.	
Bleeding from the navel.		Death on the 12th day from birth.	
Bleeding from the navel.		Death on the 14th day from birth.	
Increase of jaundice; fretfulness; constipation; stools without bile; hemorrhage from the nostrils, mouth, and bowels.	None mentioned.	Death on the 14th day from first bleeding.	The blood appeared to be venous.
	Ferrum candens.	Death.	Hemorrhage was supposed to depend on non-obliteration of the umbilical arteries.
		Death.	Hemorrhage came on after separation of cord.
	Attempted to plug the navel.	Death.	
	Attempted to plug the navel.	Death.	
Jaundiced the third day after birth; stools light; urine brown; hem. began after a fit of coughing; blood contained a large amount of bile, as shown by stains.	Caustics and compression of temporary benefit.	Died about 30 hours after hem. began.	Internal organs, except liver, spleen, pale, yellow, and bloodless; liver of normal size, soft, and full of dark bile; gall-bladder collapsed; excretory ducts of liver and of gall-bladder wholly absent.
Became jaundiced on the third day after birth.		Died 4 days after hem. began.	
Jaundiced on the third day; hem. began by a slight oozing; estimated loss of blood, ʒiss.	Astringents, styptics, and pressure of temporary benefit.	Died comatose 4 days after hem. began.	Surface and internal organs, except liver and spleen, yellow; navel healthy; liver slightly congested and dense; gall-bladder partially filled with bile retained by plug of inspissated bile in *ductus choledochus.*

NO.	AUTHORITY AND REFERENCE.	SEX.	HEREDITARY HISTORY, CHARACTER OF LABOR, ETC.	CONDITION AT BIRTH.	DATE AFTER BIRTH WHEN	
					CORD SEP'D.	HEM. BEGAN.
21	Dr. Ulsamer (Neue Zeitschrift für Geburtskunde, vol. xvii. p. 271, 1845).					
22	M. Jeunin (Revue Médicale, Paris, Sept. 1847, p. 87, vol. xcix).	M.			6th day.	7th day.
23	Dr. Olliffe (Lond. Med. Times, April 3, 1847, vol. xvi. p. 116, or M. Paul Dubois, Archiv. Gen. de Méd., Oct. 1849, p. 187, or Virg. Med. & Surg. Jour., Oct. 1853, p. 53, case ii.).	M.		Small and delicate.	6th day.	11th day.
24	Dr. J. Y. Simpson (Edinburgh Monthly Jour. of Med. Science, July, 1847).		Parents healthy; child born in India.			
25	Dr. J. Y. Simpson (loc. cit.).		Same parents as No. 24; child also born in India.			
26	Dr. E. J. Marsh (New Jersey Med. & Surg. Rep., vol. i. p. 181, 1848).					
27	Dr. E. J. Marsh (loc. cit.).					
28	Dr. T. F. Cock (N. Y. Annalist, vol. ii. p. 189).	F.			5th day.	8th day.
29	M. Villeneuve (Gaz Méd. de Paris, Mar. 11, 1848, p. 191).					9th day.
30	M. Thore (Gaz. Méd. de Paris, Mar. 11, 1848, p. 191–2, and Virg. Med. & Surg. Jour., Oct. 1853, p. 55).	M.		Apparently well.		13th day.
31	M. Emile Dubois (Thése de Paris, 1848, No. 241, or Archiv. Gén. de Méd., Oct. 1849, p. 188, or Lond. Med. Gaz., May, 1850, p. 757, or Virg. Med. & Surg. Jour., Oct. 1853, p. 55).	M.		Of good constitution.	7th day.	8th day.
32	Mr. Edward Ray (Lond. Med. Gaz., vol. xliii. p. 423, Mar. 1849).	M.	Mother bled largely two years before from injuries received by being thrown from a chaise.	Feeble; jaundiced; refused both breast and food.		
33	Mr. Edward Ray (loc. cit.).	M.	Same mother as Nos. 32 & 34.	Strong and healthy.		
34	Mr. Edward Ray (loc. cit.).	M.	Same mother as Nos. 32 & 33; short and natural labor.	Well formed and apparently strong and healthy.	6th day.	10th day.
35	Mr. Edward Ray (loc. cit.).	M.	These four male children were of the same parents; two female children did not bleed.			
36	Mr. Edward Ray (loc. cit.).	M.				
37	Mr. Edward Ray (loc. cit.).	M.				
38	Mr. Edward Ray (loc. cit.).	M.				

SYMPTOMS.	TREATMENT.	RESULT.	AUTOPSY AND REMARKS.
	Nitrate of silver, alum, and kino; filled the navel with soft wax.	Death.	
	Nitrate of silver, compression, and hot iron unsuccessful; ligature *en masse* came away fourth day, leaving perfect cicatrix.	Recovered.	Bouchat (*Dis. of Child.*, Eng. ed. Lond. 1855, pp. 131–2) says, this patient afterwards died of purpura, but this is doubtful.
Steady oozing; icterus; purpuric spots on tongue and palate; bloody dejections; after ligature, which arrested the hemorrhage, continued in a state of great debility until death.	Ice; nitrate of silver; colophony; eau Brochieri—all failed: the ligature *en masse* arrested the hem. completely, and the eschar falling off, there was perfect cicatrization.	Died purpuric seven weeks from birth.	Umbilical vein nearly obliterated; left umb. artery obliterated; right pervious, its inner coat presenting nodosities containing small clots; liver large, of natural color; submucous hem. about colon, and blood in lateral ventricles of brain and sub-arachnoidean space; ductus venosus closed; ductus arteriosus and foramen ovale not completely.
Hem. came on some days after funis separated; jaundice.	Pressure and styptics.	Died on 11th day.	
Hem. came on as in No. 24; jaundice.	Pressure and styptics.	Died on 11th day.	The walls of the umbilical vessels were much thickened and indurated, as high up as the liver.
Jaundice.	Compression, astringents, and escharotics.	Death.	
Jaundice.	Compression, astringents, and escharotics.	Death.	
Icterus; slight oozing at first; ecchymosis on the 10th day.	Compression and burnt alum, tannin, plaster of Paris, creasote, and matico.	Death 2 days after hem. began.	
Recurred four times.		Death 42 hours after hem. began.	
Hem. preceded by violet spots on skin; hem. slight, blood serous; after arrest of hem. was buccal and gastric hem., purpura, diarrhœa, œdema, and muguet.	Compression, powdered alum, and arg. nit. stopped hem. after six days.	Died 24 days after hem. began, and 18 after it ceased.	Liver, bright yellow, and of normal consistence; navel nearly healed; umb. arteries, pervious, filled with pus, clots, and fluid blood; umb. vein empty and contracted; foramen ovale and ductus arteriosus incompletely obliterated.
Blood flows freely without impulse from opening at bottom of umbilicus; after arrest of hemorrhage, vomiting, diarrhœa, tympanitis, ending in coma.	Pressure with the fingers, arg. nit., colophony, and spunk, only of temporary use; ligature *en masse* permanently checked the hemorrhage.	Died 12 days after hem. of enteritis.	Umb. vein and ductus venosus collapsed, not obliterated; ductus arteriosus and foramen ovale incompletely closed; umb. arteries resembled whitish cords with narrow canal, and containing adherent filiform clot; tissues exsanguined.
		Death 19 days after birth.	
Became jaundiced a few days after birth.		Death on the 11th day after birth.	
Jaundice on the third day after birth; constipation and light stools; blood thin, of light vermilion hue; oozed in fine stream evidently from left umb. artery; ecchymosis on left arm.	Compression, astringents, styptics; double ligature was followed by oozing from the needle's puncture; single ligature controlled hem.; beef tea and ammoniæ carb.	Death 46 hours after hem. began.	Liver of normal size and olive-brown hue; ecchymosed; cystic, hepatic, and common ducts open; umb. vessels pervious, except where tied; blood fluid. Three female children of this lady lived and were healthy.
Purpura.		Death.	These four cases were attended by Drs. Key and Babbington.
Purpura.		Death.	
Purpura.		Death.	
Purpura.		Death.	

NO.	AUTHORITY AND REFERENCE.	SEX.	HEREDITARY HISTORY, CHARACTER OF LABOR, ETC.	CONDITION AT BIRTH.	DATE AFTER BIRTH WHEN	
					CORD SEP'D.	HEM. BEGAN.
39	Dr. John Homans (Boston Med. & Surg. Jour., July 11, 1849, p. 449.	M.		Healthy.	9th day.	6th day.
40	Dr. John Homans (loc. cit.).	F.		Healthy.	4th day.	4th day.
41	Dr. John Homans (loc. cit.).	M.		Remarkably symmetrical and healthy.	5th day.	6th day.
42	Dr. John Homans (loc. cit.).	F.		Healthy.	5th day.	18th day.
43	Dr. John Homans (loc. cit.).	M.		Healthy.		5th day.
44	Dr. John Homans (loc. cit.).	F.	Circulation in funis audible during the last weeks of pregnancy.			1st day.
45	Dr. John Homans (loc. cit.).	M.		Healthy.	5th day.	5th day.
46	Dr. Henry I. Bowditch (Am. Jour. Med. Sciences, vol. xix. p. 63, et seq., Jan. 1850).	F.	Mother a stout healthy young woman; labor natural; first child.	Quite healthy.	3d day.	14th day.
47	Dr. Henry I. Bowditch (loc. cit.).	M.	Same mother as No. 46; 4th child; two intervening male children show no tendency to hem.; labor natural.	Plump and hearty.	5th day.	10th day.
48	Dr. F. Amyot (Lond. Med. Times, vol. xxi. p. 449, 1850).	M.	Father healthy; mother delicate.	Rather weakly.	6th day.	6th day.
49	Dr. W. C. Anderson (Boston Med. & Surg. Jour., vol. xli. p. 440, Jan. 2, 1850).	F.	A sister of this child had jaundice and purpura at four months of age, terminating favorably.	Apparently healthy.		11th day.
50	Dr. W. C. Anderson (loc. cit.).		Mother lost a former daughter, on the 5th day, with jaundice and purpura, but without hem.			

SYMPTOMS.	TREATMENT.	RESULT.	AUTOPSY AND REMARKS.
Slight hem., resisting all control until separation of cord.	Styptics, argent. nit., and compression.	Recovery.	
Profuse hem. a few hours after separation of cord; subsequent hem. from bowels; drowsiness; sallow countenance and indications of pain.	Compression, styptics, arg. nit., a long time useless; hem. finally checked by compress of scrapings of sole leather firmly secured by straps.	Recovery.	Had jaundice at six years, from which she recovered readily.
Hem. recurred 3 times; navel became inflamed and swollen from applications; icteric on the 8th day.	Compression failed; arg. nit. and collodion, several times repeated, finally effectual.	Recovery.	Was uniformly well one year later.
Jaundico, purpura, and bleeding from the gums.	Compression and argent. nit.	Death 5 days after hem. began.	
Colicky pains and green stools when first seen; jaundice, purpuric spots on skin.	Compression by finger once stopped hem. 12 hours; ice, creasote, argent. nit., hot iron, lint soaked in solution of shellac, tr. fer. muriat., all useless.	Death.	Hem. came from a point within navel one-quarter size of caliber of cord.
Hem. from funis until 4th day; then from navel; œdema, ecchymosis; circumscribed spots on limbs of stony hardness.	Compression and styptics.	Death on the 5th day.	Surface yellowish; extravasation of blood under skin into lungs and parietes of intestine; blood in heart pale and thin; no clot; no blood or clot in umbilical vessels; arteries traceable into funis.
Ecchymosis about funis on the 2d day after birth; purpuric spots universally soon after.		Death on the 5th day, a few hours after hem. began.	No hemorrhagic tendency has been known in the parents of Nos. 39—45.
Oozing of thin arterial looking blood; slight colics; bloody stools; ecchymosis.	Compression, astringents, arg. nit. seemed to increase hem.; double ligature through navel unsuccessful; two needles at right angles encircled by ligature arrested hem. for a time.	Death 6 days after hem. began.	
Colic occasionally on the fifth day; dejections whitish; urine highly colored by bile; slight ictcrus; ecchymosis; no coagulation of blood; a streak of blood once in stool.	Filled the navel with tannin, and over it compress of spunk; calomel, ol. ricini, sodæ sulph.; actual cautery by means of knitting needle.	Death 4 days after first ecchymosis.	Surface sallow, but in spots livid from extravasation; no coagula in heart or umb. vessels, which latter were closed; liver large, flaccid, yellowish, soft, adhering to cloth and staining like feces; gall-bladder small and empty; ducts pervious.
Hem. from scrotum on the 5th day; umb. hem. free, oozing from tongue, mouth, and gums; hem. from stomach and bowels; ecchymosis on pressure.	Alum, matico, catechu restrained the hem. but temporarily.	Death on 7th day from 1st hemorrhagic symptom.	
Intense jaundice; stools clay colored; urine dark; purpuric spots appeared simultaneously with the hem., which was a continuous oozing.	"All the usual means of arresting hemorrhage."	Death 28 hours after hem. began.	Tissues all yellow; mucous memb. of stomach ecchymosed; liver large and reddish-brown; gall-bladder distended with greenish-yellow bile; ductus communis coledochus terminated in *cul-de-sac;* fœtal openings closed, except the umb. vein, whence the hemorrhage flowed.
Jaundice and purpuric spots.		Death on the 8th day after hem.	

No.	Authority and Reference.	Sex.	Hereditary History, Character of Labor, etc.	Condition at Birth.	Date after Birth when	
					Cord Sep'd.	Hem. began.
51	Dr. John Manley (Lond. Med. Gaz., vol. xlv. p. 755, May 3, 1850).	M.	Labor natural.	Apparently healthy.	5th day.	
52	Dr. W. C. Bailey (Amer. J. of Med. Sci., April, 1852, p. 432).	M.	Parents healthy; labor short and easy.	Healthy.	3d day.	9th day.
53	Dr. W C. Bailey (loc. cit.).	F.	Same parents as No. 52.	Healthy.	4th day.	9th day.
54	Dr. W. C. Bailey (loc. cit.).	M.	Labor short and easy.	Healthy.		12th day.
55	Dr. Henri Roger (L'Union Médicale, Mar. 24, 1853, vol. vii. p. 138, and Virg. Med. & Surg. Jour., Oct. 1853, p. 53).	F.		Small but well formed and active.		13th day.
56	Dr. Henri Roger (loc. cit.).		Twins born at eight and a half months.	Delicate.	7th day.	10th day
57	Dr. Henri Roger (loc. cit.).				7th day.	10th day
58	Willard Gage (Western Lancet, Sept. 1853, p. 552.)				8th day.	8th day.
59	Dr. George A. Otis, (Virginia Med. & Surg. Jour., vol. ii. p. 51, Oct. 1853).	M.	Mother healthy; labor natural; no hemorrhagic tendency in family.	Small but well formed.	7th day.	14th day.
60	G. F. B. Willing, Esq. (Med. Times & Gazette, March 25, 1854, p. 287).	F.	Mother healthy; sanguineous temperament; labor short and easy.		7th day.	13th day.
61	Dr. Augustus A. Gould (Boston Med. & Surg. Jour., vol. liii. No. 6, Sept. 6, 1855).	M.	Parents healthy and cousins; labor easy under ether.	Weight 9 lbs.; had congenital ichthyosis, as had a previous child (not No. 62).	5th day.	9th day.

SYMPTOMS.	TREATMENT.	RESULT.	AUTOPSY AND REMARKS.
"Soon after" separation of cord, spots of blood on linen; jaundice; dejections lightish, and bowels much relaxed; on 14th day oozing increased, blood thin, pale, and non-coagulable.	Nit. arg., graduated compress, kept in place by thumb, alum, Ruspini's styptic; actual cautery; internally, hydr. cum cret.	Death on the 17th day from birth.	
Sixth day, constipation, clay-colored stools; pain on extending legs; hem. slight at first; free on the 10th day, in a fine pulsatile jet, from left to right; ceased spontaneously five hours before death.	Compress of cobweb, zinc, lead, arg. nit., and actual cautery, only seemed to stimulate the hem.; pressure by thumb.	Death 48 hours after hem. began.	Body became of a saffron hue four hours after death.
On the 8th day stupid, costive, stools clay-colored; icterus; cries only when legs are extended; purpuric spots about 15th day.	Internally, calomel, hydr. cum cret., ol. ricini, and sustaining diet; matico and burut alum useless; ligature under needles restrained hem. 14 days.	Death 22 days after hem. began.	The mother of these two children has two healthy children (male and female) living.
Icterus on 2d day; stools scanty and clay-colored.	Hydr. cum cret., ol. ricini, infus. taraxaci.	Death 24 hours after hem.	Hem. ceased spontaneously.
Diarrhœa, with green and glairy dejections; skin pale and cold; bleeding slight *en bavant;* blood of a light color.	Astringents, pressure, arg. nit., actual cautery.	Death 2 days after hem. began.	No jaundice, or purpura, or hem. from internal organs; no alteration of liver; foramen ovale nearly, and duct. arteriosus entirely closed; umb. vein healthy, and closed by firm clots; right umb. artery double usual size, pervious, and filled with half coag. blood; inner surface black and wrinkled; left artery like right in less degree.
	Ligature *en masse.*	Death.	
	Ligature *en masse.*	Death.	
Oozing of sanious fluid, which deepened into a percolating hem. in 48 hours.	Styptics and astringents for 4 days uselessly; applied concavity of thimble over navel, which stopped the hem.; thrown off by firm cicatrix.	Recovery.	
Icterus 3d day; dejections clay-colored; face wrinkled, lips pallid; ecchymosis on tongue and palatine arch; vomited matters tinged with blood; hem. profuse; blood non-coagulable; bloody dejections and purpura.	Compression, astringents, styptics, argent. nit., perchloride of iron, a *serre-fine,* checked hem. for some hours, and ligature *en masse* permaneutly; internally, tr. fer. chlor., opium, and nourishing food.	Death 44 hours after hem. began.	
Jaundiced within 12 hours of birth; stools without bile on the 3d day; benefited by purging; navel healthy on separation of cord; on 13th day, slight oozing; blood did not coagulate.	Tannin, matico, alum, graduated compress, plaster of Paris retained by finger, lint and sesquichloride of iron, nit. arg., all unsuccessful; cobweb, saturated with tr. ferri sesquichlor., retained by pad and adhesive strap, checked hem.; beef tea and stimulants internally.	Death 3½ days after hem. began, 17 hours after its cessation.	Surface blanched but yellow; liver dark, and gorged with blood; gall-bladder much contracted; umb. vein pervious, with thickened walls near orifice, and contained a small clot; left artery pervious, containing fluid blood; right closed; duct. arteriosus and duct. venosus open; spleen soft; supra-renal capsules non-adherent; excess of serum in pericardium; ecchymosis on lower lobe of left lung; foramen ovale open; blood every where fluid.
Alvine discharges, free from bile and frequent; hem. oozing at first, afterwards escaped in a fine jet; slight exudation of blood at anus; jaundiced; urine amber-colored.	Tannin and compression, arg. nit., ligature, alum, and collodion, without much effect.	Death on the 3d day after hem. began.	Umbilical vessels all pervious; liver dark colored, friable, and gorged with blood; gall-bladder contained a drachm of serous fluid; common and cystic ducts impervious.

NO.	AUTHORITY AND REFERENCE.	SEX.	HEREDITARY HISTORY, CHARACTER OF LABOR, ETC.	CONDITION AT BIRTH.	DATE AFTER BIRTH WHEN	
					CORD SEP'D.	HEM. BEGAN.
62	Dr. Augustus A. Gould (loc. cit.).	F.	Same parents as No 61; born under the use of ether.	Weight 8¼ lbs.; ichthyosis as above.	5th day.	6th day.
63	Dr. Stephen Smith (N. Y. Journal of Medicine, July, 1855).		Mother had syphilis; child born at seven months.		5th day.	5th day.
64	Dr. Stephen Smith (loc. cit.).	M.	Second child; parents healthy.	Healthy.		4th day.
65	Dr. Stephen Smith (loc. cit.).	F.	First child; parents healthy.			2d day.
66	Mr. Keiller (Ranking's Abst., Amer. ed., vol. vi. p. 270).	M.		Plump and hearty at birth.		
67	Dr. Evert (in Dr. Stephen Smith's table, loc. cit., No. 21).	M.	Mother had syphilis two years before.	Feeble; had eruption.		8th day.
68	Dr. Condie (Treat. on Dis. of Children, 3d ed., p. 636).					
69	Dr. Condie (loc. cit.).					
70	Dr. Condie (loc. cit.).	M.				
71	Dr. Francis Minot (from Table of Cases arranged for analysis, vide Amer. Jour. Med. Sciences, Oct. 1852, p. 310).	F.	Mother feeble; one miscarriage from an accident; present confinement about 8th month, as she supposes from fright; had some uterine hemorrhage a few weeks after confinement; labor natural.	Feeble.	7th day.	13th day.
72	Dr. Minot (loc. cit.).	F.	Mother healthy; labor natural; cord not tied until pulsations had ceased.	Feeble.	6th day.	
73	Dr. Minot (loc. cit.).	M.	Mother delicate; has had several miscarriages; labor easy.	Small but nursed well.	6th day.	3d day.
74	Dr. Minot (loc. cit., communicated by Dr. A. Hooker).	M.	Mother's health not quite as good as during former pregnancies; appetite good; no nausea after eating, but vomited bile and mucus; in two former pregnancies vomited food, but no bile; labor natural.	Appeared well.	6th day.	4th day.
75	Dr. Minot (loc. cit., communicated by Dr. A. Hooker).	F.	Same mother as No. 74; mother's health same as in preceding pregnancy; labor natural and easy.	Perfectly well.		10th day.

SYMPTOMS.	TREATMENT.	RESULT.	AUTOPSY AND REMARKS.
First evacuation like meconium, subsequent ones not bilious; jaundiced on the sixth day.	Little effort was made to check it.	Death 2 days after hem. began.	Umbilical vessels pervious; liver congested and of a bronze-green color; little gelatinous fluid in gall-bladder; cystic duct closed, and hepatic as far as could be made out; common duct dilated; intestines unusually pink colored.
Hemorrhage oozing.	Caustic with tannin and compress; burnt alum and tr. ferri mur., plaster of Paris, used but not so as to test its virtue.	Death on the 2d day.	
Hem. free; arterial from left side of cord at its attachments.	Nit. argent., tannin, and compress, arrested flow temporarily.	Death in 1 hour.	Child exhausted when first seen; crying excited return of hemorrhage.
Coustant oozing.	Compressed sponge on tannin, with adhesive strip extending round body, arrested it temporarily; gave sulph. acid and iron, brandy, &c.	Died in 10 hours.	Hemorrhage recurred during the night, and child died without being observed.
Vomited from time to time; bleeding at root of cord.	Nitrate of silver; ligature around umbilicus.	Died 3 days after birth.	
Bleeding from left of navel and scrotum at first, three days after from skin.		Died on the 5th day.	Very marked case of syphilitic cachexia.
Percolation around root of cord at place of attachment to abdomen.	Arrested by powder of starch, sugar, and acetate of lead, constantly added.	Recovered.	
Same symptoms as No. 68.	Same treatment as No. 68.	Died.	Blood flowed too freely to allow paste to harden.
Janndice over whole body; constipation; clay-colored stools; hem. ceased spontaneously.		Died.	
No jaundice; blood oozing, thin and pale, without coagulating; amount of blood lost not great.	Plaster of Paris, and compression.	Died in 6 hours.	
Skin yellow; bowels regular; dejections dark green; cord never separated; child almost comatose; blood, as in No. 71, oozing.	Lunar caustic, punk, lint, powdered alum, compression.	Died 36 hours after hem. began.	Liver natural in size, color, and consistency; ducts pervious; gall-bladder contains a small amount of bile; hemorrhage apparently increased by applications.
Jaundice on 2d day increasing in intensity; bowels constipated, but freely moved by medicine; urine yellow, then red; hem. first at root of cord, before separation; free hem. on separation of cord; blood thin and watery, and did not coagulate.	Mercurial purgatives, with oleum ricini and enemata; tannin checked the 1st hem.; dilute nitric acid gtt. ½ each 2 hours; ligature applied tightly around the navel controlled the hemorrhage.	Died 3 days after hem. began.	
Jaundice on the 4th day; hem. also began on the 4th day, the cord being still attached.	Hydr. c. creta; stimulants; the usual local applications, with pressure.	Death 6th day after hem. began.	The mother of this and the next child had had two previously, and though one of them had jaundice at the age of four or five years, they are now alive and well.
Jaundice on 4th day; same day rejected drinks, and dejections became green; the cord, which was dried and hard, was separated with scissors, on the 8th day, on account of chafing and swelling of adjacent parts; child more comfortable next day.	Treatment same as No. 74.	Death 1 day after hem. began.	

NO.	AUTHORITY AND REFERENCE.	SEX.	HEREDITARY HISTORY, CHARACTER OF LABOR, ETC.	CONDITION AT BIRTH.	DATE AFTER BIRTH WHEN	
					CORD SEP'D.	HEM. BEGAN.
76	Dr. Minot (loc. cit., communicated by Dr. A. Hooker).	F.	Mother healthy; first child; labor brought on at commencement of 9th month by severe attack of vomiting; breech presentation.	Appeared bright and well.		5th day.
77 78 79 80	Dr. Minot (Amer. Jour. Med. Sciences, ut supra, communicated by Dr. A. Hooker).		Mother healthy, and had good labors.		In all cord separated before hem. began.	
81	Dr. Minot (loc. cit., communicated by Dr. S. S. Wipple).	M.	Parents robust; labor in all respects natural.	Appeared perfectly sound; weight over 9 lbs.	7th day.	30 hours from birth.
82	Dr. Minot (loc. cit., Dr. Hayward's case, from Dr. J. B. S. Jackson's notes).			Tumor on head of the size of a cherry.		3d day.
83	Dr. Minot (loc. cit., 2d case of Dr. Hayward, from Dr. J. B. S. Jackson's notes).	M.	Born at full term.		5th day.	13th day.
84	Dr. Minot (loc. cit., from Boston Lying-in Hospital Records [Dr. Read], April 23 1852).	M.	Mother healthy; difficult labor; twins; first child (girl) shoulder presented; spontaneous evolution, breech presented; still born; second (boy) natural presentation.	Very feeble; moaning.		2d day.
85	Dr. Minot (loc. cit., from Boston Lying-in Hospital Records [Dr. Read], Feb. 9. 1850).	F.	Labor natural.		7th day.	7th day.
86	Dr. Minot (loc. cit., communicated by Dr. W. S. Townsend).	M.		Apparently healthy.	6th day.	18th day.
87	Dr. Minot (loc. cit., from Records of Boston Lying-in Hospital [Dr. L. Parks, Jr.], 10 Sept. 1851).	M.	Father had jaundice seven years ago; mother healthy; craved and ate freely of dandelions during pregnancy; labor natural and not severe.	Healthy; weighed 8 lbs.		5th day.
88	Dr. Minot (loc. cit., from Records of Boston Lying-in Hospital [Dr. L. Parks, Jr.], 14 Feb., 1853).	F.	Mother healthy; labor tedious (first child), but otherwise natural, followed by exhaustion and hemorrhagic pulse.	Feeble, and did not breathe until after the application of stimulants.	6th day.	5th day.
89	Dr. Minot (loc. cit., communicated by Dr. J. F. W. Lane.)	M.			"In due time."	10th day.

SYMPTOMS.	TREATMENT.	RESULT.	AUTOPSY AND REMARKS.
Slight jaundice soon after birth; hem. began before cord was detached; was separated same day [5th] by scissors; became very yellow before death.	Argent. nit., &c.	Died at close of 7th day.	
All had jaundice.		All died.	Has since had a child which, though slightly jaundiced, did not bleed, and did well.
Dejections natural and frequent; 30 hours from birth hem. from around umbilicus by exudation; blood non-coagulable; likened to cranberry juice; checked by cupri sulph.; 24 hours afterwards returned more profusely with prostration; rallied under tr. ferri mur. and brandy; improved till 9th day, when hem. returned; liver apparently acted well.	Checked at first by a solution of sulphate of copper; tr. ferri mur., and brandy, internally, seemed to be of service.	Died 8 days after hem. began.	The mother had been uneasy during the latter months of pregnancy, from the description of a child which had bled from the navel, and she spoke frequently to the nurse about it before her confinement.
Tumor increased on 4th day to a very large size, and apparently contained blood; child died same day with symptoms of compression of brain.	"Every effort" useless; double ligature through umbilicus of no avail.	Died in 24 hours.	
Never passed any thing like meconium or bile; dejections white like milk.		Died 7 days after hem. began.	Blood of heart extremely thin and pale, without coagula or fibrin; foramen ovale open; duct. arteriosus closed; stomach and intestines contain blood in considerable quantity; no ecchymoses; contents of gall-bladder, light amber-colored fluid.
On the 3d day continual oozing from whole length of cord below ligature; cord not separated; no icterus.		Died in 24 hours.	
Did well until 7th day, when hem., on separation of cord, in a very fine stream, which resisted all efforts to stop it; the child was yellow.	Matico, ligature.	Died in 48 hours.	
Umbilicus was apparently healed six days after birth; hem., which was not at any time profuse, continued six days; no jaundice.	Lint and compression, with strips of adhesive plaster and bandage.	Recovered.	
Very yellow on 3d day; vomiting; dejections dark colored; urine stains yellow; on 5th day, emaciation, convulsions, diarrhœa, ecchymosis in roof of mouth, hem. from umbilicus; 6th, diarrhœa, dejections dark-colored; cord not separated; loss of blood less than an ounce.	Collodion, pressure; internally, laudanum and calomel.	Died in 24 hours.	Heart and lungs healthy; spleen dark-purple; liver dark, very solid, not friable: gall-bladder greatly distended, translucent, not opened; ducts and umbilical vessels not examined.
Icterus on second day; vomits froth; 3d day, vomited blood, dejections free and black; 5th, bleeding; 6th, less hem. and less yellowness; 7th, less yellowness, no hem.; purple spot in left lumbar region.	Calomel.	Recovered.	
Did well until 10th day, when blood was discovered on dress; navel apparently perfectly healed; occasional hemorrhages, chiefly about 4 P. M.	Caustic.	Death in 5 days.	

NO.	AUTHORITY AND REFERENCE.	SEX.	HEREDITARY HISTORY, CHARACTER OF LABOR, ETC.	CONDITION AT BIRTH.	DATE AFTER BIRTH WHEN	
					CORD SEP'D.	HEM. BEGAN.
90	Dr. Minot (loc. cit., communicated by Dr. A. B. Snow).	F.	Mother healthy; labor natural.			
91	Dr. Minot (loc. cit., communicated by Dr. S. W. Butler).	M.	Mother a healthy colored woman; labor not long and "favorable."	Very well.		3d day.
92	Dr. Allaire (d'Héricy-sur-Seine), (Gaz. des Hôpitaux, Oct. 11, 1856), Paris.	M.			4 days.	9th day.
93	Dr. Charles Hooker (Trans. Amer. Med. Assoc., vol. viii. 1855, p. 451).	F.	No hereditary predisposition to purpura, but the mother had an inordinate thirst, which she freely indulged during pregnancy.		5th day.	9th day.
94	Dr. Charles Hooker (loc. cit., and note book).		Same condition as No. 93.			
95	Dr. Jefferson Church (Virg. Med. & Surg. Jour., March, 1857).	M.	Parents healthy, colored, "though few northern negroes are exempt from a scrofulous taint?"	Healthy.		18 hours.
96	Dr. J. Y. Simpson (Edinburgh Monthly Jour. of Med. Science, July, 1847, p. 70).					
97	Dr. J. Y. Simpson (loc. cit.).					
98	Dr. Steinthal. (Behrend's Jour. für Kinderkrankheiten, band 28, heft 1 u. 2, Jan. u. Feb. 1857, s. 44, Erlangen.)	M.	Mother healthy.	Well formed.	6th day, navel fully cicatrized.	20th day.
99	Dr. Steinthal (loc. cit., s. 45).	M.	Fifth child; others had not bled; labor easy.			3d day.
100	Dr. Steinthal (loc. cit., s. 46).	M.	Same parents as No. 99; labor easy.	Appeared well in every respect.	10th day.	3d day.
101	Dr. Abelin (Jour. für Kinderkrankheiten, Sept. u. Oct. 1857).	M.	Child prematurely born.			

SYMPTOMS.	TREATMENT.	RESULT.	AUTOPSY AND REMARKS.
Hem. at the end and at the root of funis; color of skin not altered.		Died on the 3d day.	
Began to bleed on the 3d day; was checked by bandage; soon recurred, and child died; cord not separated; hem. from edge of umbilicus; patient passed bloody urine.		Died in a few hours.	
Blood issued continuously from a fissure below, and to the left of the umbilicus.	Lint, amadon, pressure, and ligature *en masse*.	Died in 5 hours.	Deep in the fissure was discovered an open artery, admitting a probe, from which the hem. had evidently come.
Hem. began profusely 4 days after separation of cord; ecchymoses general over roof of mouth, and purpuric spots on limbs and body.		Died 12 hours after hem. began.	
Ecchymoses on roof of mouth only.		Died.	
Blood oozed at root of cord from its entire circumference; did not coagulate; coloration of urine and conjunctiva, though jaundice not noted.	Opiates and astringents internally, acctate of lead, tannin, and compression did not arrest hemorrhage even temporarily, but seemed to augment it.	Died 3 days after hem. began; anæmic.	
	Transfixure of bleeding part with needle, and including ligature; as in hare-lip.	Recovered.	
	Same as in No. 96.	Recovered.	
Hem. varied in amount from time to time; not exhaustive; from rim of navel and root of left great toe-nail, trickling slowly from minute point; region of liver hard, sensitive, and seemed to be enlarged; constipation, icterus; six days later, child cried much; ecchymoses appeared; the next day hem. from nose and mouth proving fatal.	Compress of German tinder, moistened and thickly strewn with powdered tannin, arrested hemorrhage from navel.	Died 7 days after hem. began.	
Nails markedly blue on 1st day; ecchymoses on 2d day; slight icterus on the 5th day; "otherwise felt well and even vigorous."	Compress and firm bandaging.	Recovered.	Became hydrocephalic; was imperfectly developed, morally and physically, and died with convulsions during an attack of pneumonia before the end of the second year.
Until 3d day vomited occasionally material like meconium; this day belly band was tinged with blood, apparently exuded through walls of the cord; 4th day, renewed exudation; purpurous look of left arm and back; child nursed well; 5th day, extravasations on ankles; slight icterus; 7th day, spots on back and arm looked better; general health good; icterus nearly gone; 8th day, new greenish spots in groin; clearer next day; liver dull over enlarged region; 11th day, navel cicatrized, child entirely well.	Fomentation of purpuric spots with infusion of chamomile; tr. of iron internally four times a day; no bleeding after a compress sprinkled with tannin was bound on, on the fourth day.	Recovered.	
Hem. from umbilicus and penis.	All the usual remedies.	Died 1 day after hem. began.	General anæmia; strong injection into membranous portion of urethra.

NO.	AUTHORITY AND REFERENCE.	SEX.	HEREDITARY HISTORY, CHARACTER OF LABOR, ETC.	CONDITION AT BIRTH.	DATE AFTER BIRTH WHEN	
					CORD SEP'D.	HEM. BEGAN.
102	Communicated by Dr. F. J. Bumstead, of New York.	M.	Mother healthy, but her food during gestation was poor and insufficient; a former female child had jaundice three days after birth; recovered, and died convulsed at three months; other children healthy.		5th day.	11th day.
103	Communicated by Dr. Edwards Hall, New York.	M.	Parents healthy; child unusually robust.			20th day, navel entirely healed.
104	Communicated by Dr. S. S. Purple, of New York.	M.	Parents healthy; born at full term.		3d day.	5th day.
105	Communicated by Dr. S. S. Purple, of New York.	F.	Father syphilitic.	Feeble.		6th day, cord was separated.
106	Communicated by Dr. George Benedict, S. Amboy. N. J.	M.	Parents healthy.	Healthy.	6th day.	6th day.
107	Communicated by Dr. George Benedict, S. Amboy, N. J.	F.		Healthy; born at 8th month.		8th day.
108	Communicated by Dr. J. H. Shearman, New York.		Mother feeble; had lost one child with hydrocephalus; this child born at 7th month.		7th day.	7th day.
109	Communicated by Dr. Edward Delafield, New York.					
110	Communicated by Dr. Edward Delafield, New York.					
111	Communicated by Dr. Chas. Henschel, New York.	F.				
112	Communicated by Dr. Chas. Henschel, New York.					
113	Communicated by Dr. Henry G. Cox, New York.		Mother much depressed, and had deficient diet during gestation.	Feeble.		
114	Communicated by Dr. Henry G. Cox, New York.		Mother subjected to privation during gestation.			
115	Communicated by Dr. Henry G. Cox, New York.					
116	Communicated by Dr. J. T. Metcalfe, New York.					
117	Communicated by Dr. J. T. Metcalfe, New York.					
118	Communicated by Dr. J. T. Metcalfe, New York.					
119	Communicated by Dr. J. T. Metcalfe, New York.					
120	Communicated by Hon. J. W. V., M. D.	M.	Parents healthy.	Healthy in appearance.		
121	Communicated by Hon. J. W. V., M. D.	F.	Same parents as No. 120.	Healthy in appearance.		
122	Communicated by Dr. Chas. E. Isaacs, Brooklyn, N. Y.					
123	Communicated by Dr. Chas. E. Isaacs, Brooklyn, N. Y.					
124	Communicated by Dr. Chas. E. Isaacs, Brooklyn, N. Y.					
125	Dr. C. R. Gilman, New York.					
126	Communicated by Dr. C. R. Gilman, New York City.					

SYMPTOMS.	TREATMENT.	RESULT.	AUTOPSY AND REMARKS.
Jaundiced the third day from birth, but had bilious stools; vomited blood; purpuric spots on hands; lower extremities mottled with purple; lips exsanguine; blood oozed from general surface of umbilicus; did not coagulate; after ligature hem. recurred from points of insertion of needles; convulsions.	Lint wet with tr. ferri chlor., maintained by pressure, checked hemorrhage a few hours; ligature *en masse* arrested hem. 2 days; internally, quinia, tannin, tr. ferri chlor., hydr. cum cret., with rheum.	Death 10 days after hem. began.	Surface yellow; parts about ligature deep-purple; umb. arteries open, vein closed; ductus venosus pervious, but contracted; liver of a deep-bronze color and firm; weight, 9 oz.; gall-bladder contained yellowish viscid fluid; cystic duct much contracted, but pervious; hepatic duct open; foramen ovale open to the size of a crow-quill; ductus arteriosus lined with lymph.
Strophulus the 1st week, which suddenly receded; jaundice on the 14th day, and extensive swellings, which seemed erysipelatous (?) but discharged only blood; occasional petechiæ.	No means of any service in arresting hemorrhage.	Death 3 days after hem. began.	
Jaundiced on 4th day; navel observed to be ulcerated on 5th day; severe hem. from bowels on 7th day.	Solution of tannin to ulceration, and compression with scrapings of sole leather, arrested the hemorrhage from umbilicus.	Death apparently from intestinal bleeding, 2 days after first hem.	
Jaundice and purpura, hem. from nose and mouth; emaciation.	Sulphate of copper, tannin, compression, &c.	Death 4 days after hem. began.	
	Powdered alum retained by compress and adhesive strips.	Recovery.	
Was jaundiced.	Astringents of temporary use.	Death 14 days after hem. began	
Bled also at mouth and ears.	Compression and arg. nit. useless.	Death 3 or 4 days after hem. began.	
Jaundiced.		Death.	
		Recovery.	
	Umbilicus filled with tannin.	Death.	
	Umbilicus filled with powdered alum.	Death.	
Jaundiced.		Death.	
Jaundiced.		Death.	
Not jaundiced.	Powdered alum with pressure.	Recovery.	
Jaundiced.		Death.	
Jaundiced.		Death.	
Jaundiced.		Death.	
Jaundiced.		Death.	
	Astringents and styptics, with compression.	Death.	
	Astringents and styptics, with compression.	Death.	
Jaundiced.		Death.	
		Death.	
		Death.	
Not jaundiced.	Compression.	Recovery.	
Not jaundiced.	Compression.	Recovery.	

NO.	AUTHORITY AND REFERENCE.	SEX.	HEREDITARY HISTORY, CHARACTER OF LABOR, ETC.	CONDITION AT BIRTH.	DATE AFTER BIRTH WHEN	
					CORD SEP'D.	HEM. BEGAN.
127	Communicated by Dr. George T. Elliot, New York.					
128	Communicated by Dr. George T. Elliot, New York.					
129	Communicated by Dr. George T. Elliot, New York.					
130	Communicated by Dr. B. Fordyce Barker, Now York.					
131	Communicated by Dr. B. Fordyce Barker, New York.					
132	Communicated by Dr. Joel Foster, New York.	M.		Foeblo.		
133	Communicated by Dr. H. P. Dewees, New York.					
134	Communicated by Dr. J. L. Vandervoort, New York.	M.				
135	Communicated by Dr. J. L. Vandervoort, New York.	M.	Parents black.			
136	Communicated by Dr. J. S. Thebaud, New York.	M.			6th day.	6th day.
137	Communicated by Dr. E. T. Winter, New York.				6th day.	13th day.
138	Communicated by Dr. A. Gescheidt, New York.	M.	Parents healthy.	Feeble.	8th day.	8th day.
139	Communicated by Dr. F. A. Thomas, New York.		Mother, a dark mulatto, healthy.	Healthy; a light mulatto.	7th day.	7th day.
140	Communicated by Dr. E. L. Beadle, New York.	M.	Parents healthy and free from any constitutional taint; no tendency to hem. in family.	Healthy in appearance.		"Soon after birth."
141	Communicated by Dr. A. K. Gardner, New York.	F.	Mother a prostitute; had secondary syphilis.			
142	Communicated by Dr. A. K. Gardner, New York.		Mother syphilitic.	Covered with large blebs containing pus.		2d day.
143	Communicated by Dr. B. R. Masters, New York.	M.	No syphilitic or scrofulous taint in either parent; mother anæmic at time of confinement; had suffered much from nausea, diarrhœa, and mental depression during gestation; labor protracted 16 hours.	Thin, small, and weak.		2d day.
144	Communicated by Dr. B. R. Masters, New York.	F.	No constitutional taint in either parent; mother had suffered much from vomiting, constipation, &c., during gestation, but seemed in good health at the time of labor; labor tedious, 15 hours.	Plump, weight 11 lbs.; veins of cord, large, dark, and full, and their walls thin.		3½ hours after birth.

SYMPTOMS.	TREATMENT.	RESULT.	AUTOPSY AND REMARKS.
	Styptics, compression, ligature *en masse*.	Death.	
	Styptics, compression, and filling umbilical depression with fluid plaster of Paris.	Death.	
	Styptics and compression.	Death.	
	Powdered matico and pressure partially successful; plaster of Paris completely so, in checking hem.	Recovery.	
	Powdered matico and pressure partially successful; fluid plaster of Paris filling umb. completely so.	Recovery.	
Jaundice; ecchymoses.	Ligature *en masse* stopped hemorrhage.	Death.	
	Alum and powdered ergot unsuccessful; conical plug of cork with compression stopped hem.	Recovery.	
Jaundiced.		Death 24 hours after hem. began.	
		Death 2 days after hem. began.	
	Compress and adhesive strap.	Recovery.	
Surface yellow.	Alum and argent. nit. useless; filled navel with tannin, and put over it a compress spread with moist tannin.	Recovery.	
Jaundiced two days after birth.	Astringents, styptics, compression, ligature *en masse*.	Death 48 hours after hem. began.	
	Astringents, nitrate of silver, and compression.	Death 7 days after hem. began.	
Hem. at first from divided end of cord, afterwards from around its insertion.		Death 2 or 3 days after hem. began.	
Hem. from the attachment of the funis to the body; child had also gonorrhœal ophthalmia.	Compressing cord with large ligature of cotton wicking, sprinkled with powdered catechu.	Death 2 or 3 days after birth.	
Hem. from cord.		Death.	
Pale blood noticed first on band; jaundice on third day; hem. in diminished quantity; no purpura.	Ligature to umbilicus, cloths wet with astringent solutions to abdomen, and internally elixir vitriol.	Death on the 5th day from birth.	Mother had metritis on fifth day; recovered.
Pale blood exuded from the walls of the cord; 5½ hours after birth purpuric spots appeared on skin; 6½ hours after birth frothy serum and blood issued from mouth and nostrils.	Ligature on cord at its insertion, with bandage about funis; internally, brandy.	Death 7 hours from birth, 3½ from 1st hem.	

NO.	AUTHORITY AND REFERENCE.	SEX.	HEREDITARY HISTORY, CHARACTER OF LABOR, ETC.	CONDITION AT BIRTH.	DATE AFTER BIRTH WHEN	
					CORD SEP'D.	HEM. BEGAN.
145	Communicated by Dr. Chas. Hooker, New Haven, Ct.	F.	Mother had intense thirst during pregnancy, and drank largely.	Not wakeful and bright, but lay in a sub-comatose condition with generally stertorous breathing.	5th day.	5th day.
146	Communicated by Dr. Chas. Hooker, New Haven, Ct.	M.				
147	Communicated by Dr. Chas. Hooker, case of Dr. George A. Moody, Plainville, Ct.		Mother had an intolerable thirst during pregnancy.		5th day.	15th day
148	Communicated by Dr. H. W. Dean, Rochester, N. Y.	F.	Parents appear to be perfectly healthy.	Good; weight 8 lbs.		8 weeks.
149	Communicated by Dr. H. W. Dean, Rochester, N. Y.	M.	Parents healthy.	Weighed 9¼ lbs.; appeared perfectly healthy.		
150	Communicated by Dr. H. W. Dean, Rochester, N. Y.	F.	Same parents as Nos. 149 & 151.	Weight 7½ lbs.		21st day.
151	Communicated by Dr. H. W. Dean, Rochester, N. Y.	M.	Same parents as Nos. 149 & 150; a later child died of purpura and icterus without umb. hem.	Weight 9½ lbs.		
152	Communicated by Dr. S. Barrett, Le Roy, N. Y.	M.	Mother scrofulous.	Healthy in appearance; average size.	7th day.	8th day.
153	Communicated by Dr. S. Barrett, Le Roy, N. Y.	F.	Mother healthy.	Pale and delicate.	8th day.	6th day.
154	Communicated by Dr. S. Barrett, Le Roy, N. Y.	M.			6th day.	7th day.
155	Communicated by Dr. P. C.	M.	Twins; father has since died	Apparently		48 hours
156	Samson, Syracuse, N. Y.	M.	of cancer of the face; mother healthy, as was father at the time.	healthy.		after birth.
157	Communicated by Dr. C. V. W. Burton, Lansingburgh, N. Y.	M.	Parents rather delicate, but without scrofulous or syphilitic taint.	Healthy.	5th day.	5th day.
158	Communicated by Dr. A. J. Skilton, Troy, N. Y.		Parents healthy.			
159	Communicated by Dr. A. J. Skilton, Troy, N. Y.		Same parents as No. 158.			
160	Communicated by Dr. P. Stewart, Peekskill, N. Y.	F.	Mother of feeble constitution and scrofulous tendencies.	Healthy.	5th day.	5th day.
161	Communicated by Dr. Henry C. Gray, North White Creek, N. Y.	M.	Parents healthy.	Healthy.	5th day.	5th day.
162	Communicated by Dr. James H. Pooley. Dobb's Ferry, N. Y.	M.	Parents healthy.	Healthy and large.	"At the usual time."	7th day.
163	Communicated by Dr. James H. Pooley, Dobb's Ferry, N. Y.	M.	Healthy.	Healthy.		

SYMPTOMS.	TREATMENT.	RESULT.	AUTOPSY AND REMARKS.
Jaundiced on the 2d day; effusion of blood under scalp on 4th day; roof of mouth ecchymosed, and purpuric spots on limbs and trunk; occasional slight oozing from umb. after falling of the cord; stools tarry; 7th day profound coma relieved by puncture of tumor of scalp.		Death 3 days after hem. began. Recovery.	
Skin yellow; stools clay-colored; bloody discharges from bowels; purpuric spots on skin.		Death 3 days after hem. began.	
Icterus, at end of six weeks, accompanied by nausea; four days later, purpuric spots; and, later still, blood in stools, urine, and ejecta of stomach; emaciation; spoon made mouth bleed; 14 days after illness began, hem. from umbilicus.	Hydr. cum creta and rheum, for jaundice; tr. ferri mur.	Death 3 or 4 days after umbilical hem. began.	
Jaundiced on the 2d day; refused to nurse; bleeding from the margin of the umbilicus; stools natural.		Death on the morning of the 4th day.	Liver normal in appearance; cystic and hepatic ducts impervious.
Jaundiced when one week old; purpura of skin, and hem. from umbilicus, mouth, and bowels, at the age of 3 weeks.		Death 14 days after hem. began.	
Very similar to those of case 149.		Death at 3 days from birth.	After death of child, nursed a friend's child which grew fat and strong on her milk.
Oozing from spongy surface of umbilicus; no jaundice or purpura; hem. continued ten days.	Compression, with alum and tannin; internally, 2 drops acidi sulph. aromat. each 3 hours; mother also took acid as she flowed freely.	Recovery.	
Hem. from the bladder for 4 or 5 days, which ceased when the hem. began from umbilicus.	Compression with alum.	Recovery.	
	Various styptics.	Death 5 days after hem. began.	
Rapid venous hem. from whole circumference of cord at root; no jaundice or purpura.	Graduated compress, and astringents.	Death 24 hours after hem. began.	Nephew of mother had hemorrhage from neck, at age of 14, requiring ligature.
Hem. per saltum on falling of cord; jaundice on 3d day; no purpura.	Astringents and styptics; ligature *en masse;* allowed the needle to drop off with eschar.	Recovery. Died 2 or 3 days after birth. Died 3 days after hem. began.	
Supposed to have lost a pint of blood (?) in two days.	Treatment first 2 days not reported; powdered nutgall, and a hard compress, arrested hemorrhage.	Death in 2 weeks from exhaustion.	
Continued dribbling; no jaundice or purpura.	Astringents, compression, cold, arg. nit., and actual cautery.	Died 6 days after hem. began.	
Jaundice three or four days after birth.	"Usual styptics," pressure, and cold water.	Death 3 days from 1st hem.	
Jaundice.		Death.	

NO.	AUTHORITY AND REFERENCE.	SEX.	HEREDITARY HISTORY, CHARACTER OF LABOR, ETC.	CONDITION AT BIRTH.	DATE AFTER BIRTH WHEN	
					CORD SEP'D.	HEM. BEGAN.
164	Communicated by Dr. G. C. Mouell, Omaha, Nebraska.	M.	Healthy; mother always flowed largely at delivery.	Healthy.		12 hours.
165	Communicated by Dr. J H. Reynolds, Wilton, Saratoga County, N. Y.	F.	Mother delicate but healthy; not slightest scrofulous or syphilitic taint in parents.	Healthy.	5th day.	3d day.
166	Communicated by Dr. A. L. Saunders, Brookfield, Madison County, N. Y.	M.	Parents healthy; no scrofulous or syphilitic taint; no hemorrhagic tendeucy in family.	Apparently healthy; weighed 11¼ lbs.	4th day, umb. healed.	9th day.
167	Communicated by Dr. Wm. Wood, East Windsor Hill, Ct.	F.	Parents perfectly healthy; no hemorrhagic tendency in family.	Healthy.	4th day.	14th day.
168	Communicated by Dr. Elisha P. Fearing, Nantucket, Massachusetts.	F.	Father healthy; mother scrofulous; other children (six) scrofulous.	Apparently healthy.	9th day.	10th day.
169	Communicated by Dr. Elisha P. Fearing, Nantucket, Massachusetts.	F.	Phthisical tendency in family; two other children have died of pulmonary maladies.		5th day.	6th day.
170	Communicated by Dr. S. H. Dickson, Charleston, S. C.	F.	Parents healthy; father old; mother quite young; no hemorrhagic tendency transmitted.	Hardly viable; born at less than 7 months.	8th day.	5th day.
171 172 173 174	Communicated by Dr. D. McRuer, Bangor, Me.		Parents of two healthy; mothers of other two uot; one died of phthisis, the other of cancer, withiu a year.			In all the cases immediately after the separation of the cord.
175	Communicated by Dr. D. McRuer, Baugor, Mo.	M.	Parents healthy; no hereditary teudeucy to hemorrhage.			
176	Communicated by Dr. Simon Whitney, Framingham, Mass.	F.	A year later parents were syphilitic; *probably* so at time of birth; labor easy.	Apparently healthy.	6th day.	6th day.
177	Communicated by Dr. John Watson, New York.		Mother healthy, and had several healthy children; did not flow unusually after labor; has siuce lost another child from the same cause.	Apparently healthy; large and florid; had no jaundice.		30 hours after birth.
178	Author.	M.	Parents healthy; labor short and easy; first child.	Small.	6th day.	7th day.

SYMPTOMS.	TREATMENT.	RESULT.	AUTOPSY AND REMARKS.
Oozed steadily from whole circumference of cord at root; no purpura.	Alum, compression, caustics.	Death 12 hours after hem. began.	
Hem. venous; no jaundice.	Powdered starch and gum Arabic, with compress.	Death 2 days after hem. began.	
Blood oozed as from a sponge from whole circumference of navel; did not coagulate and was thin; no purpura; extension of legs caused pain, also compression, which also excited spasm.	Astringents and compression.	Death 21 hours after hem. began.	Slight yellowness *after death.*
	Astringents and cautery.	Death in a few hours after hem. began.	
First day, slight; next day, alarmingly profuse; no jaundice or purpura.	Compress and bandage; then ligature under needles crossed at right angles through skin and cellular tissue; effectual; internally, brandy.	Recovery; though hydrocephalic for many months.	
	Ligature of vessels and cellular tissue.	Death at 4 weeks, from bleeding at mouth; no umb. hem. after ligature.	
Oozing around the insertion of the cord; no jaundice, or purpura.	Pressure, styptics, and ligature.	Death 1 day after hem. began.	
Purpura in two cases; jaundice in two, observable 48 hours after birth; one lived 3 mos., bleeding at intervals of from 4 to 8 days. This one had, after 4 weeks, a fungoid growth at the umb. orifice, from which blood oozed.	Astringents, compression, and in the case having fungus, caustics to it.	Death in all the cases.	
	Dr. J. M. Sims' clamp suture, passing the wires beyond the ring, and drawing forward the umbilicus, care taken not to strangle integument embraced by clamps completely; clamps remained in *situ* 16 days; internally two drops tr. ferri chlor. each 4 hours, and a robust wet nurse was provided.	Recovery.	
Jaundice on 3d day after birth; hem. very free at times; subsequently bled from mouth.	Tannin, zinci sulph., alum, useless; arg. nit., with compression, stopped it at navel.	Death 7 days after hem. began.	
The first hem. was a few drops from the string; was renewed early on the second day; was checked a few hours by remedies.	Argent. nit. and sugar of lead and alum.	Death 33 hours after hem. began.	
Colicky pains for 36 hr's; jaundiced on the 2d day; vomited blood on the 7th day; same day blood oozed steadily from the umbilicus. Only temporarily restrained by remedies.	Cold; conoidal compress, saturated with strong solution of alum, retained by bandage.	Death 16 hours from com. of hem	

An examination of the preceding histories and tabular analysis shows the existence of two varieties of the form of umbilical hemorrhage under discussion.

First, and most common, that depending on a depraved condition of the blood, the spanæmia resulting sometimes from jaundice, through malformation, or deranged function of the liver, sometimes from an inherited scrofulous or syphilitic taint, and probably not unfrequently from privation and despondency in the mother during gestation, or during the same period an excessive use of alkalies or diluent fluids.

Second. Independently of any dyscrasia of the blood, umbilical hemorrhage seems to arise by reason of an unusual patency of the umbilical vessels, in otherwise apparently healthy children.

These two conditions of the hemorrhagic flow are doubtless often associated, but that the second exists sometimes exclusively, may not be questioned.

Proceeding with the discussion of the general subject before us, we encounter *in limine*, queries as to the causes of this hemorrhage.

Etiology.—It is apparent that any influence which affects the normal plasticity or coagulability of the blood, may act as a predisposing cause of hemorrhage. An existing predisposition to hemorrhage is the more likely to be followed by its occurrence in so far as the mechanical obstacles which ordinarily impede it cease to exist.

What then are the normal conditions of the obliteration of the umbilical vessels? On the 5th or 6th day after birth the cord generally falls, leaving frequently a slight ulceration at its root, which is succeeded by firm cicatrization about the 10th day. A few hours after birth a coagulum begins to form in the outer extremity of the umbilical arteries. It is adequate as a temporary plug to restrain bleeding from the arteries, until the permanent occlusion of the vessels, which is effected about the 25th day.[1] Any

[1] This statement is established by the researches in 1852, at the *Enfans Trouvés*, of M. Lorain, whom Roger, in his aforementioned memoir, styles a "distinguished hospital student." They pertain to the physiology and pathology of the cord and umbilical vessels. I quote the following concerning the obliteration of the umbilical arteries, adopting the translation of Dr. George A. Otis. (*Virginia Medical and Surgical Journal*, Oct., 1853, p. 57.) "There are two modes of obliteration: in the first, the obliteration is provisional; it suffices for the present necessities of the new-born child, and guards against early accidents; it consists in a clot which

influence then which retards or prevents the formation of this coagulum, or even which displaces it, is likely to lead to hemorrhage, to which may be added any cause deteriorating the healthy constitution of the blood. Some of these influences are: 1. Malformation of the liver and its deranged function, resulting in jaundice. It is a well established fact that in almost all cases of jaundice the blood becomes much impoverished, the globules and the fibrin falling below their natural standard, and that, consequent on this impoverished state of the blood, a general disposition to hemorrhage very commonly exists. With diminished fibrin, the salts of the blood are in excess.[1] Such cases, then, as Nos. 2, 18, 20, 49, and 149, where there was occlusion or constriction of the hepatic or common duct of the liver, or as Nos. 34, 47, and 102, in which jaundice probably resulted from the functional derangement of its secreting tissue, present a condition of the blood little favorable to early coagulation. 2. A spanæmic condition of the blood is often induced by excessive drinking of diluent fluids, manifesting itself by dropsical effusion, and by purpuric eruption under the skin and mucous membranes, and by hemorrhages from the gums, stomach,

forms a few hours after birth. This coagulum is found in children who have not lived more than four or five hours; it commences sometimes in the arteries of the cord, and sometimes at the junction of these vessels with those of the abdomen; it is black, of mediocre consistence, adhering but slightly to the walls of the artery, and is at first very short; subsequently it is elongated by the successive deposition of new molecules, until, at the end of the second day, it occupies two-thirds or half the length of the artery, commencing at the umbilicus. It is then firmer, denser, and more adherent to the walls of the vessel. During the succeeding days this coagulum acquires greater consistence, and loses, at the same time, its black color, and assumes a fibrinous aspect; it becomes more and more regularly cylindrical. In proportion, as the clot contracts, the artery narrows. This may be called the provisional mode of obliteration.

"The other consists in the complete occlusion of the artery at its umbilical extremity, an occlusion which occurs in the following manner: the extremity of the artery is retracted from the navel, contracts and presents a conical extremity; this hardly takes place before the twenty-fifth or thirtieth day; at this date the calibre of the artery is very small, and is occupied by a fibrinous clot, white, dense, regularly cylindrical, and closely adherent to the arterial coats. This is the true obliteration. When Billard speaks of the vessels being obliterated on the fifth day, he does not explain what he means by this occlusion, the mechanism of which he seems to have entirely misunderstood."

[1] Budd, Diseases of the Liver, 3d edition, London, 1857, pp. 337, 472, 473. Monneret, Archives Générales de Médecine, June, 1854, p. 64, *et seq.* Prof. Lebert, of Zurich, on Typhoid Icterus, Vierteljahrschrift, No. 1, 1856, Prague. Simon, Animal Chemistry, Sydenham Society's edition, 1845, p. 330.

bowels, &c. When this polydipsia is indulged during pregnancy, the blood of the infant is equally dilute with its mother's, alike void of plastic elements. Nos. 93, 94, 145, and 147, are instances illustrating this source of blood impoverishment.

Dr. Charles Hooker, of New Haven, Ct., in a Report on the Diet of the Sick, made to this Association in 1855,[1] adduced excessive drinking of water as a prominent cause of *purpura hemorrhagica*, and in a recent private communication to the writer enforces the same opinion. While all cases of umbilical bleeding in infants are not complicated with purpura (20⅓ per cent. only of the cases of umbilical hemorrhage in my table having, so far as noted, exhibited petechiæ, ecchymoses, or other sign of its presence), we cannot doubt that bleeding at the navel and purpuric eruption, are alike, often, but symptoms of general blood disease.

It is desirable that inquiry be made concerning the excessive indulgence of thirst during pregnancy, or the contrary fact, in future observations of bleeding at the navel.

3. An impaired quality of the infantile blood is doubtless often due to an inherited scrofulous or syphilitic taint. One or both parents of Nos. 152, 160, 168, and 169, of the tabulated cases, were scrofulous or phthisical; of Nos. 63, 67, 105, 141, and 142, syphilitic.

4. It has been noticed[2] that an excessive use of alkalies by pregnant women for dyspepsia, or other conditions, renders them peculiarly liable to hemorrhage after parturition. The child is not likely to have more plastic blood than its mother.

5. Insufficient food, privation, and depression of spirits, during gestation, can hardly fail to impair the healthy quality of the blood of both the mother and her offspring. Nos. 102, 113, 114, and 143, were children of mothers thus unfortunate.

6. Arrest from whatever cause of the fœtal development of the liver, by impairing its blood-making qualities,[3] is very likely to induce spanæmia.

7. A diseased condition of the umbilical vessels, the result of their inflammation, is undoubtedly a cause of hemorrhage from the navel. Roger, in his memoir before referred to (Mars 26, 1853, p. 142), considers that umbilical *arteritis* is a frequent cause, that "the

[1] Transactions, vol. viii. p. 451.

[2] Dr. M. S. Perry, cited by Dr. Minot (*loco cit.*, p. 319).

[3] Prof. E. R. Peaslee, American Medical Monthly, May, 1854, p. 343.

want of obliteration, of which the hemorrhage is the consequence, is due to this alteration of the artery," and that "the dilated, friable, and ulcerated arterial vessels cannot retract and oppose the outflow of blood from the umbilicus." Prof. Simpson also states[1] that secondary hemorrhage from the umbilicus is frequently combined locally with deposits and disease in the walls of the umbilical vessels.

Hereditary transmission of the hemorrhagic predisposition may be inferred from nine cases [Nos. 6, 9, 10, 11, 12, 32, 33, 34, and 164], in which the mothers had been liable to profuse menorrhagia, excessive bleeding after labor or injuries, or when there was other evidence of a hemorrhagic tendency in the family [No. 6], as well as from the fact that 17 other mothers, in whom no hemorrhagic tendency was apparent, bore more than one child which bled at the navel. [Mothers of Nos. 3, 4, 5, 9, 10, 11, 12, 19, 20, 24, 25, 32, 33, 34, 35, 36, 37, 38, 46, 47, 52, 53, 56, 57, 61, 62, 74, 75, 99, 100, 149, 150, 151, 155, 156, 158, 159, 177, and one not in the table, thirty-nine children.]

Despite the hereditary bequeathal of this disease as thus evinced, I have been surprised to notice, that of families known as "bleeders," where the slightest injuries often induce serious hemorrhage, scarce any record exists of infantile umbilical bleeding, the case reported by Dr. Elssaesser [No. 6], in which, however, the parents and grandparents are reported as healthy, being the only one in the table.

To determine how far the mother's imagination or emotions during pregnancy can influence the condition of her offspring, will require a more extended array of facts than we at present possess. In this connection, Dr. Minot pertinently gives the following extracts from a letter of Dr. S. S. Whipple, communicating a fatal case of the disease in a child of robust parents. "I will mention a single coincidence in the case, which must be taken for what it is worth.

"Some time in the latter months of pregnancy, a female friend told the mother to be sure and caution her attendants about the navel, as a friend of hers had had much trouble from carelessness of a like kind. She said she had felt greater solicitude from that time; the description of the bleeding child gave her feelings some-

[1] Obstetric Works, American edition, vol. ii. p. 423, and Edinburgh Monthly Journal of Medical Science, July, 1847.

thing of a shock, and she was frequently heard to speak of the circumstance to the nurse before her confinement."

In this disease is seen another proof of the greater proneness of males over females to hemorrhagic fluxes. Of 111 cases in which the sex is noted, 73 or 65¾ per cent. are males, and but 38 or 34¼ per cent. females. The disproportion, however, between the sexes is not so great as in Grandidier's statistical summary of 54 families of "bleeders."[1]

There are not data sufficient to enable us to judge of any influence, exerted by climate or race, on the production of this malady. Well marked instances are recorded of its existence in England, Ireland, Scotland, the East Indies, France, Germany, and in the United States, the negro and mulatto sharing in common with the white, a liability to its invasion.

Though, in many instances, the broken health of the parents does undoubtedly induce this hemorrhage, the malady cannot, in a majority of cases, be *traced* to parental disease. Of 87 cases, where the health of one or both parents was noted, 51, or 58.6 *per cent.*, were in good health.

Still less to tedious or difficult labor does umbilical hemorrhage owe its existence. But two instances of its occurrence, thus complicated, are noted among 26 cases in which the character of the labor is recorded.

External violence may be promotive of hemorrhage from the navel, by displacing the provisional clot, before the permanent occlusion of the umbilical arteries.

Symptoms and Course of the Disease.—Generally there is no premonitory indication of its fearful coming. In a very few instances colicky pains have been noticed, preceding the hemorrhage, and in an equally small number, vomiting. The signs of an unnatural condition of the liver, as constipation, light, white, or clay-colored stools, urine deeply stained with bile, and a yellow skin, more frequently precede the hemorrhage. Thus, jaundice was evident in more than 23 per cent. of the tabulated cases [41 in 178], *before* there was any appearance of hemorrhage. Purpura, though a complication in one-fifth of the cases, *preceded* the umbilical hemorrhage scarcely half as often, manifesting itself in ecchy-

[1] There were 320 children in these families, 197 males, 123 females. 154 males, and only 17 females, were affected with hemorrhages.—*Die Hämophilie, oder die Bluterkrankheit.* Leipzig, 1855, p. 97.

moses, vomiting of blood, or its escape by stool, in but 9.6 per cent. of all the cases (17). Though a precursor of hemorrhage, in but 41 cases, jaundice was noted as existing during its course in 77 or 43½ per cent. of all the cases reported. From the imperfect manner in which some of the histories are furnished, it is probable that a still higher percentage would obtain in more fully recorded observations. Purpura was present at some stage of the malady, frequently in varied manifestations, in 36 cases, or in 20⅓ per cent. of all reported cases.

Time of commencement of hemorrhage.—Though, in a great majority of cases, bleeding does not commence until the separation of the cord, the exceptions are numerous. In more than 27 per cent. (31 cases out of 113 in which the circumstance is noted), the bleeding took place from the walls, or at the insertion of the funis, before the completion of the physiological process of desiccation. Of cases where the bleeding followed the separation of the cord in 22 out of 82, or nearly 27 per cent., it occurred on the same day, not unfrequently immediately succeeding it. Hemorrhage commenced, on an average in 102 cases, on the 8th day. Of these cases bleeding commenced in the first week after birth in 56, during the second week in 39, and in 7 during the third week. In one case, No. 144, bleeding was apparent in 3½ hours after birth. In another, No. 148, only at the termination of 8 weeks. The period of hemorrhage in this case, for obvious reasons, was not included in the summary, from which the average date of hemorrhage after birth was derived.

The character of the hemorrhage is variously described. The phrases "steady oozing," "slight oozing," "oozing of bloody serum," "exudation of pale blood," describe one group of cases, or more accurately, the commencement of most. "Rapid venous hemorrhage," "hemorrhage *per saltum*," "continual dribbling," "hemorrhage very free," "hemorrhage alarmingly profuse," mark the beginning of some cases, and an advanced condition of others. The hemorrhage is both venous and arterial. The evidence inclines to the belief that it is more frequently arterial than venous. In 12 cases, in which the autopsies showed clots or fluid blood in the umbilical vessels, they were found in the arteries alone 7 times, in the veins alone twice, and in both the arteries and veins 3 times. In 15 autopsies, in which reference is made to the state of the vessels, one or both umbilical arteries were found pervious in 12 cases. In two they were closed, and their condition in one is not noted

The same cases displayed the vein open in eight cases, in three it was closed, in one, nearly obliterated, in one, collapsed, but not obliterated, in one, empty and contracted, and in one, its condition was not noted. The want of the arterial jet (noticed only twice, Nos. 61, 157), probably "depends rather upon the anatomical disposition of the parts, the arteries either containing a half-formed coagulum, which deadens the remote impulsion of the heart, or else being retracted within the abdomen, and thus leaving an interval between their open extremities and the umbilical orifice."[1] The difficulty of distinguishing its source, by the appearance of the blood, is increased by the occasional patency of the other fœtal openings, which allows admixture of the venous and arterial blood. The blood is thin, pale, and non-coagulable, in a large proportion of cases. It is not often that the blood can be seen to issue from a distinct orifice. More frequently it exudes from the walls of the cord, or percolates from an ulceration about its insertion, or wells up from granulations at the bottom or side of the navel.

Duration of the hemorrhage.—The average duration of the disease, after the appearance of hemorrhage, in 82 fatal cases, was $3\frac{1}{2}$ days. Death has occurred as early as three hours from the beginning of hemorrhage (No. 144), while life has been prolonged 38 days thereafter, No. 23.[2] When speedily fatal death seems most often to result from exhaustion from loss of blood, or the fatal issue may be deferred to be but later attended by purpura, œdema, diarrhœa, *muguet*, or other signs of exhaustion. It is not strange that coma or convulsion complicated six cases (Nos. 31, 72, 82, 87, 102, and 145).

Pathological Anatomy.—This has been sought for less often than is desirable. But 22 cases are noted in which any examination after death was made, and in some of these it was very incomplete. Attention was very naturally drawn most frequently to the liver and umbilical vessels. The liver was examined 15 times. No peculiarity was constant. Its color was noted 13 times. In 4 cases it was natural; in 2, lighter; and in 7, darker than its normal hue. Its density is reported as firm, soft, and normal, alike in 3

[1] Dr. George A. Otis, Virg. Med. and Surg. Journ., Oct., 1853, p. 60.

[2] A correspondent informs me of the exceptional case of a young lady, æt. 18, who at intervals is still subject to hemorrhage from the umbilicus, the ulcerated surface of which, after the separation of the cord, never cicatrized. The aspect of this patient is anæmic, though her health is generally pretty good.

cases. Its size as large 4 times, and natural 5 times. In 4 cases it was congested, and in one, full of dark bile. In this case the excretory ducts of liver and gall-bladder were wholly absent. The condition of the hepatic and cystic ducts attracted attention 11 times. In 7 cases they were absent, impervious, or obstructed. In 4, open. The gall-bladder was also 11 times the subject of notice. In but two instances has it been found to contain ordinary bile, often it has been found to contain, especially when an impervious condition of the ducts exists, a light, serous fluid, amber-colored or greenish. Out of 16 cases, where observation was made of the condition of the umbilical vessels, one or more of them was found open in 14 cases. In one case they were all closed, and in one (44), the report is not definite. Of the other fœtal openings the foramen ovale was open 7 times, and closed once. The ductus arteriosus was open 5 times, closed 3 times. The ductus venosus was open 3 times, closed twice.

A yellowness of the internal organs (except the liver and spleen), was noticed twice. Twice there was submucous hemorrhage in the intestines, twice ecchymosis of the lungs. In one case the stomach was ecchymosed, and in another case the stomach and intestines contained blood in considerable quantity. Twice the spleen was soft. In another case it was of a dark purple color. Effusion of blood in the lateral ventricles, and under the arachnoid, existed in one case, and in one case effused serum from pericarditis. The condition of the blood, elsewhere than in the umbilical vessels, was noted in 5 cases, in all of which it was fluid.

From the above *résumé* of pathological appearances in those victims of umbilical hemorrhage which have come under notice, may be inferred: 1st, a great frequency of hepatic malformation or derangement in this disorder; and 2dly, an equal frequency of perviousness in some of the umbilical vessels, or other fœtal openings. How far these conditions have relation to each other as cause and effect, pathological facts, from their fewness, are not decisive. In the 7 cases in which there was absence or obstruction of the ducts, the umbilical vessels were open in three. In one the vein alone was open, and in three the condition of the vessels is not noted. An impediment to the passage of bile into the duodenum is not, however, essential to the maintenance of patency of the fœtal openings, as shown in case No. 34. How far the imperfect secretion of bile from the blood may be a cause, observation does not teach us. Hitherto no microscopic examination of the

liver as to the extent of diminution of its secreting cells seems to have been made.

Diagnosis.—The diagnosis of this affection is easy. The frequent shrinking of the funis after its ligation, sometimes causes hemorrhage. The accidental bleeding is most likely to be confounded with those cases (90, 140) of the malady under consideration, in which hemorrhage first appears at the cut end of the cord. The mistake of confounding hemorrhage from avulsion of the cord, with that from constitutional causes, is not likely to be often made. In the early stages of the malady its diagnosis may often be assisted by noting the presence of the phenomena of icterus or purpura.

Prognosis.—This is fearfully grave. Five-sixths (83.7 per cent.) of those attacked succumb to the disease or its sequelæ (149 out of 178). Though umbilical bleeding be stayed, the child often dies of exhaustion, or by reason of the severity of the constitutional disease, of which the bleeding was only symptomatic. Complication with jaundice is perhaps the most serious, as we have seen it is the most common association. 43¼ per cent. of all the cases observed (77 in 178) are known to have manifested icteric symptoms, and of those so affected, 93½ per cent. (72 in 77) died. On the other hand, while but 7.7 per cent. (6 in 77) of those having jaundice recovered; of all those recovering, 79⅓ per cent. (23 in 29) had no jaundice.

Purpura, which, as we have seen, is in nearly one-half of the cases of jaundice complicating umbilical hemorrhage, associated with it, is of equally grave import, denoting a want of plasticity in the blood. The cases most likely to recover are those of the healthy children of healthy parents, having no dyscratic taint, in whom jaundice or purpura are not seen, and in whom hemorrhage has only come on after the separation of the cord.

Treatment.—To be efficient the treatment of umbilical hemorrhage must be undertaken early, and conducted without temporizing expedients. To rely on compression, or styptics, or caustics (even the *ferrum candens* is useless), will generally be a fatal step.[1] The

[1] Though a majority of the whole number of recoveries has succeeded to compression, sometimes associated with astringents or styptics, much the greater part of the infants thus saved had presented no signs of jaundice, purpura, or constitutional dyscrasia. In such cases one is justified in resorting primarily to this method for arresting the hemorrhage.

ordinary hemostatics are of little benefit, even if they do not, as seems to be the case, sometimes increase the bleeding. The nitrate of silver is unquestionably injurious, except when combined with pressure. Filling the umbilical depression with fluid plaster of Paris, as recommended by Dr. Churchill, has proved successful in three cases, but is not a reliable resource. Cutting down upon the bleeding vessels in order to tie them, is a difficult operation, which has never been successfully performed, and from the hemorrhagic tendency in subjects of the disease, one of considerable danger from loss of blood. Great encouragement has thus far resulted from the adoption of the ligature *en masse*, as recommended by M. Paul Dubois. He gives the following rules for its application. "The child should be placed on a table of convenient height, its back resting on a pillow, in order that the abdomen may be prominent; two assistants should confine its limbs. The operator commences by transfixing horizontally the *integuments* (not the whole thickness of the abdominal walls) with a hare-lip needle at the base of the umbilicus; another needle is inserted perpendicularly to the first, and beneath it. Then several turns in figure of 8 with a waxed thread, are to be made around each needle. The needles may be removed on the 4th or 5th day; but the eschar should be allowed to fall of itself, and nothing should be done to hasten its separation."[1]

This operation is easily performed, is of slight risk, and for the time, will generally arrest the hemorrhage. It better than anything else, affords time for correcting the depraved condition of the blood by internal medication.

This mode of relief has been too little resorted to in umbilical hemorrhage. Where jaundice appears in the newly-born it seems but prudent to avert, if may be, a possibly impending hemorrhage, by remedies addressed to the hepatic gland, always keeping in view the malformation, which may render all medication null. In cases where there had been *any* secretion of bile since birth, I should not hesitate to employ mercurials despite their anti-plastic influence on the blood. The mineral acids, the *Tr. ferri chloridi* and the sulphate of quinine, would seem in many cases also to be indicated. The table of cases affords noteworthy testimony to the efficacy, especially of the mineral acids, and of preparations of iron. Anodynes, too, are sometimes useful in allaying spasmodic muscular

[1] Translation of Dr. George A. Otis, Virg. Med. and Surg. Journ., Oct., 1853, p. 63.

action which occasionally seems to aggravate the bleeding. Nourishing food and stimulants to maintain the strength, are also indicated. I can but believe that a less exclusive reliance on direct efforts to stop the hemorrhagic flow, would have led to more favorable results in these 178 cases than the recovery of 16.3 per cent. The combination of an early application of the ligature *en masse*, with appropriate internal medication would, I think, lessen essentially the mortality, as exhibited in the table, on which the foregoing analyses are based. With regard to the prophylaxis of the disease, I quote from Dr. Minot's comprehensive essay, the suggestion of Dr. Perry, before alluded to. "I am indebted to Dr. M. S. Perry for a valuable suggestion concerning the prophylactic treatment to be employed by women who have already given birth to children, with the hemorrhagic diathesis, when again pregnant. Observing that women, accustomed to take alkalies in considerable quantities during pregnancy, for dyspeptic or other symptoms, were peculiarly liable to hemorrhage after parturition, he has been in the habit of interdicting such remedies, and of substituting for them the mineral acids, with very satisfactory results. Dr. Perry suggests that the use of the mineral acids, during pregnancy, by women whose children have been affected with umbilical hemorrhage, might be followed by favorable results; the experiment is worth trying." I am not aware that it has ever been instituted.

I am not willing to close this report, without acknowledging the courtesy which has in so many instances aided me in its progress. To all the gentlemen who have afforded me material relating to my theme, my cordial thanks are rendered, and especially are they due to Dr. Francis Minot, of Boston, whose table of cases, unfortunately unpublished with his essay, was placed at my disposal. I am happy too to acknowledge my obligation to Dr. Wm. F. Holcomb, of New York, and to Drs. Edmund Arnold and Max. Reinfelder, of Yonkers, for valuable assistance in translation from the German.

REPORT

ON

SPONTANEOUS UMBILICAL HEMORRHAGE

OF THE

NEWLY-BORN.

BY

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